



National Community Energy Strategy



C4CE

ABOUT THE AUTHORS



Institute for
Sustainable
Futures



The Institute for Sustainable Futures (ISF) was established by the University of Technology, Sydney in 1996 to work with industry, government and the community to develop sustainable futures through research and consultancy. Our mission is to create change toward sustainable futures that protect and enhance the environment, human well being and social equity.

For further information visit: www.isf.uts.edu.au



Community Power Agency was established in 2011 to support the growth of a vibrant community renewable energy sector in Australia. We work with communities to strengthen capacities to develop community owned renewable energy projects. We also collaborate with a range of organisations at a national level to address policy and systemic barriers facing the sector. Our vision is for a fair and sustainable energy sector that provides real benefit for more Australians and our environment.

For further information visit: www.cpagency.org.au



Alternative Technology Association (ATA) is a not-for-profit organisation that exists to connect, inspire and assist people to make sustainable choices in their homes and communities. Established in 1980, the ATA provides expert, independent advice on sustainable solutions to households, communities, government and industry. The ATA has more than 5000 members and has helped thousands of households save money and reduce their environmental footprint with information on energy efficiency, solar power, rainwater tanks, materials reuse and waste. The ATA also advocates in government and industry arenas to remove barriers to affordable, sustainable living for all Australians.

For further information visit: www.ata.org.au

E2Q (Appendix C: Community Energy Collective Impact Assessment Author) is helping companies and institutions to harness the power of cognitive, emotional and ecological intelligence to improve economic, environmental and social performance. We use human-centred design principles and empirical research methods to inform the design, implementation and optimisation of projects and programs aimed at organisational and social change towards a more sustainable future.

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Starfish Initiatives is a registered charity whose purpose is to create and support regional sustainability throughout Australia and beyond. Our work embodies the ability of real starfish, to self-replicate and self-heal as powerful principles for sustainability. Starfish has a long-standing involvement with community energy which began with Australia's largest community solar energy initiative to date, Farming the Sun. Starfish is also leading work on New England Wind, North Coast Energy Forum and has been a founding member of C4CE.

For further information visit: www.starfish-initiatives.org



Embark is a non-profit organisation focused on accelerating the uptake of community renewable energy projects. Embark has developed a number of innovative community business models that address the major barriers holding back the growth of the community renewable energy sector, particularly in relation to funding and governance and coupled with our community engagement processes. Embark works to shift the community energy sector into the mainstream, as a proven and financially viable model capable of attracting large-scale investment and growing to meet its full potential.

For further information visit: www.embark.com.au



Total Environment Centre: Established in 1972 by pioneers of the Australian environmental movement, TEC has committed nearly 40 years work toward protecting the natural and urban environment, flagging issues, driving debate, supporting community activism and pushing for better environmental policy and practice. TEC has been involved in National Electricity Market (NEM) advocacy for ten years, arguing above all for greater utilisation of demand side participation — energy conservation and efficiency, demand management and decentralised generation — to meet Australia's electricity needs.

For further information visit: www.tec.org.au

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1. INTRODUCTION

1.1 Project Purpose

The purpose of the National Community Energy Strategy is to develop a shared agenda – vision, set of objectives and priority initiatives – to grow a vibrant community energy sector across Australia. To ensure that this is truly a shared agenda, a highly collaborative process has been undertaken to build and secure commitment from all key actors in the emerging community energy sector.

1.2 What is Community Energy

Community Energy is the term used to describe the wide range of ways that communities can develop, deliver and benefit from sustainable energy. It can involve supply-side projects such as renewable energy installations and storage and demand-side projects such as community education, energy efficiency and demand management. Community energy can even include community-based approaches to selling or distributing energy.

Community energy projects encompass a range of technologies and activities across a breadth of scales, determined by the community needs, availability of local natural resources, technologies and funding, and community support.

Community energy projects are social or community enterprises, driven by local people. That is, community energy groups tend to have a social and environmental driver, as well as an economic one.

Community energy projects often allow individuals to be involved in clean energy beyond the bounds of their own home or business and in so doing bring a range of benefits and opportunities for their household and for the wider community. Community energy enables collective action, which can go beyond what is possible by individuals acting on their own. A community energy project is founded on more than one of the following elements:

- Ownership and/or decision making power involves local individuals and stakeholders
- Project development and design is driven by local individuals and stakeholders
- Benefits from the project go to local individuals and stakeholders
- The amount of energy produced matches local energy needs¹

While communities of place are emphasised in referring to 'local' communities, communities of interest are also relevant – such as the Coalition for Community Energy (C4CE) or the recently formed faith-based National Energy Efficiency Network (NEEN).

The more of these elements that are incorporated into a community energy project, the more strongly embedded it will be in its community. Community energy projects help to:

- Decarbonise our energy supply through using renewable energy technologies
- Decentralise and localise our energy supply
- Democratise our energy governance through community ownership and participation and
- Demonstrate that clean energy technologies work and that a clean, low carbon energy future is possible.

¹ Taken from Ison, N & Hicks, J (2012) 'What is Community Energy' in Shepherd, Allen and Harper, Home Energy Handbook. Centre for Appropriate Technology, Wales.

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We would like to acknowledge the Moreland Energy Foundation, Repower Shoalhaven and Clearsky Community Solar for their participation, significant input and help drafting and developing the Behind the Meter Solar Resources (Appendix E) and Cost Modelling Research (Appendix F). We would like to thank New England Wind and Hepburn Wind for participating in the Cost Modelling Research and Dr Declan Kuch from the University of New South Wales. We would also like to thank Sustainable Regional Australia for

being involved in the oversight of the National Community Energy Strategy project. Thank you too to Jenni Downes at ISF and Starfish Initiatives for their design work on the National Strategy and supporting documents. Finally we would like to thank the hundreds of individuals and over 40 community groups who participated in the research that lead to this strategy as well as those who participated in the Strategy development as part of the inaugural Community Energy Congress.

ARENA



Australian Government

**Australian Renewable
Energy Agency**

1.3 The need for Community Energy

Over the past decade the renewable energy industry in Australia has expanded significantly. This follows widespread agreement that the combined threats of climate change, pollution and resource depletion require a comprehensive response, including the reduction of greenhouse gas emissions from energy generation.

Government policies supporting sustainable energy have been variable and typically hinged on a patchwork of certificate trading schemes. This approach represents a marked departure from the systemic, and increasingly consolidated, planning, training, construction and operation of electricity generation infrastructure during much of the twentieth century.²

While the policy environment has fluctuated, opinion polls have consistently found widespread public support for sustainable energy. Most strikingly, this support seems to cut across the political spectrum. For example, a recent Essential Communications poll³ found significant support amongst Labor, Greens and Liberal voters for maintaining a strong renewable energy target. However, this has often failed to translate into a consistent policy and regulatory environment to support the potential of this sector domestically, and to position Australia as a leader in sustainable energy within the global community.

The diversity of benefits that community energy delivers across social, environmental and economic spheres, makes it a unique contributor to building momentum for active public support for renewable energy. It achieves this through the following unique attributes:

- Community energy provides access to, involvement in, and ownership of energy systems – which have traditionally been in the realm of government and large private organisations – to ensure the benefits are more evenly and equitably distributed. Through their grounding in community engagement and ownership, community energy projects educate and involve the broader public in the development and delivery of renewable and other sustainable energy approaches.
- Community energy secures a 'social license to operate' for energy projects in both the planning and operation stages. Community-owned energy projects tend to experience stronger support, and illicit less opposition and concern, than commercially owned ones.⁴
- The community and social focus of community energy can be appealing to decision-makers that may be divided on other aspects of sustainable energy.

The Collective Impact Assessment undertaken through this project found that the 27 participating community energy groups have a combined membership and supporter reach of over 21,000 people (see Appendix C).

Furthermore, community energy projects are well placed to fill a scale gap between large utility scale renewable energy projects (10-2000 MW) and household renewable energy (1-10 kW). Through a portfolio approach to energy planning it is recognised that a variety of forms of energy generation will be required to build a resilient, reliable and low carbon electricity grid. With community generation projects tending to range in size from 10kW to 10MW, filling this scale gap provides new opportunities to scale up the sector.

2 Wilkenfeld, G. & Spearitt, P. 2004. *Electrifying Sydney: 100 years of Energy Australia*, Sydney Energy Australia.

3 <http://essentialvision.com.au/renewable-energy-target-2> accessed 25 March 2015.

4 Based on research suggesting that the receipt of economic benefits from wind farms reduces the significantly decreased risk of community annoyance. See Pedersen, E., et al., Response to noise from wind farms in The Netherlands. *J Acoust Soc Am* 2009. 126(634-43).



1.4 Benefits of community energy

Community energy projects have a range of social, technological, economic, environmental, and policy or political (STEEP) benefits. These are outlined in Figure 1 using the STEEP framework below. Key benefits include:

- Securing new sources of funding: the community investor. The Collective Impact Assessment undertaken as part of this project found that \$23 million in community funding for energy infrastructure has been secured in the development and delivery of community energy projects to date in Australia (see Appendix C)
- Environmental benefits, not only through reduced greenhouse emissions, but also through greater engagement of community participants with energy issues and environmental values
- Developing new renewable energy capacity through scalable, replicable ownership and operating models
- Increasing public support for the renewable energy industry more broadly
- Delivering (often local) sustainable employment, education and training opportunities. See Appendix C for the employment and support impact of the community energy sector to date
- Building community resilience, empowerment and pride
- Supporting regional communities and fostering local economic development
- Creating steady income streams to fund community development projects over the 25+ year time horizons, and
- Creating a community-led response to managing electricity price rises.

Figure 1: Benefits of community renewable energy mapped against STEEP framework⁵



⁵ Taken from Ison, N & Hicks, J (2012) 'What is Community Energy' in Shepherd, Allen and Harper, Home Energy Handbook.

As one Australian community renewable energy proponent stated:

“The dividend of community owned renewable energy is so prolific... in every way, the obvious things like financial [benefits], but the below the waterline benefits are much greater; the social capital, the skills development, the social networks, the community pride, the leadership that’s taken. Community renewable energy has to be the most significant opportunity for social, community and environmental enterprise, bar none, in the developed world.”

Adam Blakester, Project Director, New England Wind, 2012⁶

⁶ Adam Blakester is also a key contributing member of the C4CE and a co-author of this strategy.



1.5 STATUS OF THE AUSTRALIAN COMMUNITY ENERGY SECTOR

The community energy sector in Australia has grown from not much more than an abstract concept in 2006, to a point where by early 2015 there are at least 19 community energy projects operating⁷ and at least 59 community energy groups developing, delivering and/or operating projects.⁸

Successful projects include:

- International award winning Hepburn Wind in Victoria – Australia's first community wind farm;
- Denmark Community Wind in Western Australia – Australia's second community wind farm;
- Repower Shoalhaven – a community-owned solar array on the Shoalhaven Heads bowling club on the South Coast of NSW;
- ClearSky Solar Investments, an organisation that has developed three community owned solar projects in regional NSW in partnership with a renewable energy developer, and
- A number of donation funded community solar projects on community buildings in Victoria, NSW and South Australia.⁹

A baseline survey conducted as part of this project (see Appendix C) shows the significant environmental, economic and social benefits already accruing to Australian communities from community energy projects. With almost 10 MW of installed renewable energy systems as at the end of 2014, the sector is delivering over 50,000 MWh of clean energy each year, and avoiding over 43,000 tonnes of carbon emissions.

There is also a range of supporting organisations providing services to and advocating for community energy at a state and national scale. Through this process, these organisations have formed the Coalition for Community Energy (C4CE) – an innovative and collaborative approach to governance to enable greater collective impact across the growing community energy sector through joint priority initiatives. C4CE anticipates that with policy support the Australian community energy sector could follow in the footsteps of the Scottish community energy sector, which grew to over 300 operating community renewable energy projects in a decade.¹⁰

There are also many other stakeholders interested in supporting or being involved in delivering community energy projects, ranging from financiers and lawyers to policy makers, retailers and philanthropists. Many of these stakeholders were engaged as part of the development of this National Strategy and/or attended the inaugural Community Energy Congress. This engagement formed a key part of the formulation of the thinking underpinning the Strategy development.

7 It should be noted that the operating projects counted are mostly community renewable electricity generation projects, particularly solar PV and wind as these are the ones most known to the authors and the ones assessed through the Collective Impact baseline assessment (Appendix C), rather than demand-side community energy projects. Further, this figure of 19 projects aggregates community energy projects where a number of small systems have been installed and excludes community solar bulk-buy programs.

8 A full list of community energy groups and associated projects is provided in Appendix A and they are mapped at <http://energyarchipelago.com/#/map>.

9 Detailed case studies can be found on the Embark Wiki (www.embark.com.au) and guides for setting up behind-the-meter community solar projects such as the REPower Shoalhaven and Clearsky models can be found in Appendix E.

10 See www.communityenergyscotland.org.uk/ for more details





1.6 APPROACH TO DEVELOPING THE National Community Energy Strategy

The National Community Energy Strategy project commenced in December 2013, funded by the Australian Renewable Energy Agency (ARENA) and led by the Institute for Sustainable Futures (ISF) at the University of Technology Sydney. The Strategy team comprises the following founding organisations of C4CE: Starfish Initiatives, Embark, the Alternative Technology Association, the Total Environment Centre, Community Power Agency, Backroad Connections, Sustainable Regional Australia and the NSW Office of Environment and Heritage. In July 2014, a contract variation for the project was confirmed and the project team expanded to include ClearSky Solar Investments, the Between Social Movements and Social Enterprises Research Program at UNSW, RePower Shoalhaven and the Moreland Energy Foundation.

The following steps were undertaken to develop the National Community Energy Strategy:

1. Defined overarching strategic questions

The two strategic questions guiding the development of the Strategy are:

- What will it take to get the current wave of community energy projects in development to a point that they are operating?
- What will it take to replicate the successful models of community energy in communities across Australia?

2. Developed a framework for addressing these strategic questions

The following five key 'sub-strategy' areas were identified as needing to be addressed in order to grow the community energy sector:

- Community energy models: clarifying and documenting standardised "models" of community energy, which form the basic components of a project that can be utilised by or adapted by new communities across Australia.
- Funding and Financing: identifying the funding and finance needs of community energy projects and the wider community energy sector.
- Capacity Building: building the capacity of community energy proponents to successfully implement and deliver their projects.
- Profile Raising and Stakeholder Support: raising the profile and build broad community support to make community energy 'mainstream'.
- Policy and Regulatory Reform: articulating the range of government interventions and support programs required to realise the vision for a vibrant community energy sector.

3. Developed consultation draft of the National Community Energy Strategy

C4CE partner organisations undertook targeted research to inform the development of the above five sub-strategy areas. This included the development of a national survey of 38 community energy projects across the country, and a series of interviews with key stakeholders to identify objectives and priority initiatives. The results of this research was then synthesised into a working draft of the Strategy.

4. Deliberative Democracy Session as part of the Inaugural Community Energy Congress

At the Congress, the Draft Strategy was presented to and input sought from approximately 180 community energy stakeholders in a half-day session at Old Parliament House. At this session, participants were invited to develop and share their vision for a community energy sector, identify a series of questions that a comprehensive National Strategy should answer and start to develop the most pertinent Priority initiatives to grow the sector.

5. Developed Draft National Community Energy Strategy

Based on the input from participants at the Community Energy Congress, the Strategy was revised, expanded and refined into a first formal draft.

6. Strategy Evaluation and Detailed Community Energy Model Analysis

As part of the National Community Energy Strategy project, additional scope was added to:

- develop a collective impact assessment and monitoring and evaluation framework so that those involved in the implementation of this Strategy can track the impact and progress of the community energy sector (Appendix C),
- adapt ARENA's renewable energy technology commercialisation framework into a Community Energy Model Maturity Index (Appendix D), to help policy makers understand how they can support community energy models to move from an hypothetical concept to wide deployment and maturity,
- further develop the community energy models sub-strategy through the development of a series of resources to help groups establish behind-the-meter community solar projects, which are currently the most viable model of community energy (Appendix E), and
- undertake analysis of the costs and cost reduction potential of six community energy models (Appendix F) to increase understanding of the range of existing models, as well as underpin the finance and funding sub-strategy.

7. Finalise National Community Energy Strategy

The National Community Energy Strategy has been revised and finalised in March 2015 to reflect the new work in Task 6. Under the guidance of the Coalition for Community Energy (C4CE), the National Community Energy Strategy will be updated periodically to reflect evolving sector needs.

1.7 STRUCTURE OF THIS DOCUMENT

The National Community Energy Strategy is structured as follows:

- **Section 1** provides an introduction and overview of the National Community Energy Strategy project.
- **Section 2** is a high-level summary of the National Strategy, outlining a vision for the community energy sector and objectives and priority initiatives within each of the five key areas.
- **Section 3** provides background as to how the shared vision was developed
- **Sections 4-9** are detailed sub-strategies for each of the five key areas: Facilitating Community Energy Models, Funding and Financing, Capacity Building, Building Support for Community Energy and Policy and Regulatory Reform.
- **Section 10** outlines the proposed processes for delivering the National Community Energy Strategy and tracking progress towards the vision and objectives identified through a shared monitoring and evaluation framework.
- **Section 11** is a list of supporting documents and appendices that have been developed through the National Community Energy Strategy. Some of these documents are finalised and publicly accessible, others are working documents that have been made available to working groups looking to progress areas of the National Community Energy Strategy.

Strategy Summary >>



2. National Community Energy Strategy Summary

At its core the National Community Energy Strategy outlines a set of objectives and 34 priority initiatives to achieve these objectives across five key 'sub-strategy' areas. These are summarised in Table 1 below. This information, the vision statement and an overview of the process undertaken has also been synthesised into an A3 Summary, which can be found at www.c4ce.net.au/nces.

Table 1: Summary of Objectives and Priority Initiatives

Objectives	Priority Initiatives
Models of Community Energy	
<ul style="list-style-type: none"> • Increase the accessibility of existing viable community energy models. • Create an environment that encourages and fosters innovation and development of new community energy models. 	<ol style="list-style-type: none"> 1 Outline and promote viable community energy models. 2 Create resources that assist community groups to decide which model to adopt or to develop a new model. 3 Encourage and promote community-commercial partnership models of community energy. 4 Support the development of new energy efficiency, peak demand management, storage, bioenergy, thermal networks, and small hydro based models of community energy. 5 Support community energy groups in setting up and developing community off-grid or micro-grid systems and business models. 6 Develop models of community energy based on Environmental Upgrade Agreement financing models. 7 Develop a community energy model that is viable regardless of government policy.





Objectives	Priority Initiatives
<p>Funding and Finance</p> <ul style="list-style-type: none"> • Increase the availability and accessibility of funding and finance that community energy projects need to a point where they are operating. • Progressively reduce costs of community energy projects to increase their economic viability. • Maximise revenue streams available to community energy projects. • Secure adequate resourcing for community energy support providers. 	<ol style="list-style-type: none"> 1 Support and further develop community energy grant funding. 2 Increase community energy groups' confidence in donation fundraising. 3 Work with institutional and sophisticated investors to develop a revolving finance fund. 4 Foster innovative approaches to electricity retailing. 5 Develop centralised services that can be shared between different groups. 6 Develop a funder roundtable to better connect funders and finances with community energy projects and priority initiatives.
<p>Capacity Building</p> <ul style="list-style-type: none"> • Develop the community energy sector into a vibrant, robust, highly skilled, and adaptable sector. • Build capacity through a number of innovative communications, networking and skills development initiatives. 	<ol style="list-style-type: none"> 1 Develop dynamic peer-to-peer networks and share learning through collaborative communications tools. 2 Develop a community energy training, mentoring and networking events program. 3 Develop an authoritative central web repository of information and resources that is known and used. 4 Develop a database for stakeholders to register the support they can provide/require e.g. potential solar hosts register. 5 Coordination and backbone support.

Objectives	Priority Initiatives
<p>Profile Raising and Building Support</p> <ul style="list-style-type: none"> • Increase key actors' awareness of community energy and its benefits. • Assist community energy groups to communicate the benefits to their local community and the wider public 	<ol style="list-style-type: none"> 1 Create an evidence based communications framework and strategy for community energy. 2 Create a strategy for pitching community energy to and building partnerships with key 'gatekeepers'. 3 Recruit influential champions to promote community energy. 4 Engage farming communities to co-create regional development opportunities. 5 Create a local government and community energy network. 6 Develop a partnership strategy for targeted allies of the community energy sector. 7 Build local, state and national multi-party policy support for community energy.
<p>Policy and Regulatory Reform</p> <ul style="list-style-type: none"> • Foster a policy and regulatory environment that proactively removes barriers to and supports the growth of the community energy sector to reach its full potential. 	<ol style="list-style-type: none"> 1 Work to ensure there is strong and stable renewable energy policy. 2 Support projects in gaining access to electricity networks at a reasonable cost and timeframe. 3 Advocate regulatory changes necessary to facilitate community off-grid or micro-grid systems. 4 Promote rights for projects to sell energy at a fair price. 5 Advocate for rules that would make it easier and less costly to secure community investors. 6 Work with State and Territory Governments to develop programs to support community energy. 7 Help establish dedicated community energy support policies. 8 Enable Virtual Net Metering. 9 Advocating for supportive planning assessment frameworks for community energy projects.



3. VISION

3.1 Summary: Vision of Community Energy Congress Delegates

Our vision is to establish a vibrant community energy sector, where communities across and throughout Australia are hubs of sustainable innovation and collaborative action between residents, business, industry, and all tiers of government. Their shared vision of achieving 100% renewable energy fits within their broader purpose of transitioning to an environmentally sustainable way of life, also encompassing food, housing, transport and more.

Community energy is one steppingstone on the path to stronger community empowerment and cohesion that helps us achieve many varied sustainability outcomes.

The community energy sector is characterised by its values and principles of: collaboration (working with stakeholders within and beyond each community); connectivity (both within and between communities); self-sustainability (for communities to meet their own energy and other needs); fair (sharing benefits equitably and making renewable energy accessible); and empowerment (supporting individuals and groups through shared decision-making, up-skilling and capacity building).

Participants at the inaugural Australian Community Energy Congress were invited to share their thoughts about a perfect future, in terms of how they envisage Australia and its community energy sector will look in 10 years' time, and what might be needed to get there. One hundred and eighty delegates drafted and framed their ideas and visions on 154 cards – in text and drawings. The results of the analysis and synthesis of these visions are as follows.

3.2 RESULTS SNAPSHOT

154 cards	Shared Vision: 100% Renewable Energy	60% prioritised Collaboration within the sector and beyond	40% prioritised community ownership along side government support	<i>'Honest conversations with the aim of win-win outcomes'</i>
42 drawings	50% included Bigger picture – sustainable living incl. transport, food, water, health	Other Aspects Industry collaboration Virtual learning Food and Health	Priority Initiatives: Capacity Building 37% Building Support for community energy 34% Policy Reform 30%	<i>'We own our energy use and our energy generation'</i>

3.3 QUOTES

A few quotes have been selected that best outline the shared vision that actors in the community energy sector have for the future.

'Energy being generated and managed by the community in a socially equitable fashion. Community management and engagement helps to bring social and community cohesion in our society. People in control of their energy futures - managing energy use (the cheapest energy is energy you don't use). Government recognition and support and involvement in making community work.'

Delegate at the Community Energy Congress, 17th June 2014

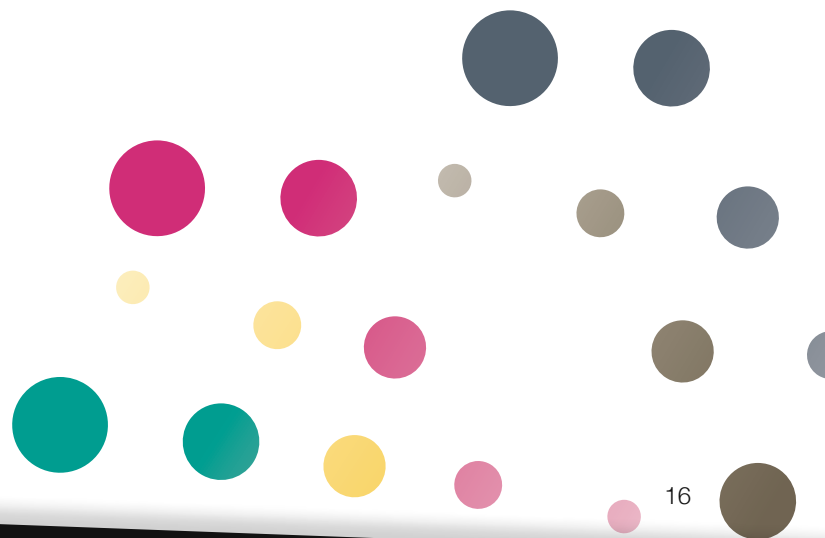
'The community co-owns the land, water, food and energy systems that they all need to survive. We care, manage and operate our systems of which renewable energy is of the heart. They are sustainable, eco-friendly and technologically viable. A warm sunshine over our solar farms, small clumps of wind turbines and bioenergy waste plants alongside the large beautiful areas for growing food.... It's a collaborative effort, everyone is inspired and we all are working together to make this happen.'

Delegate at the Community Energy Congress, 17th June 2014

The following five sub-strategies outline a series of objectives and priority initiatives that represent a series of concrete steps to bring this vision closer to reality.



SUB-STRATEGIES >>



4. SUB-STRATEGY I:

Models of Community Energy

This sub-strategy outlines what is needed to clarify and document standardised “models” of community energy, which form the basic components of a project that can be utilised by or adapted by new communities across Australia. It also outlines initiatives that can help create an environment that fosters innovation in new models of community energy.

4.1 OBJECTIVES

- Increase the accessibility of existing viable community energy models.
- Create an environment that encourages and fosters innovation and development of new community energy models.

4.2 PRIORITY INITIATIVES

A series of priority initiatives have been identified to help achieve these objectives.

4.2.1 Outline and promote viable community energy models.

Currently, there are relatively few models of community energy that are viable in the Australian energy market context¹¹ and much duplication of effort is being undertaken to identify what these models are and how they work. Developing new models of community energy takes significant time, effort and a wide range of skills. This priority initiative, aims to identify the existing viable community energy models, analyse how the intellectual property is already being collected and dispersed (by organisations such as Embark), outline what is involved through easy to understand guides and templates, and promote these to groups interested in developing community energy projects. This would include creating a clear shared understanding of what the defining qualities and benefits are of each community energy model. The outcome of this priority initiative is to aid community energy projects to become operational more quickly and prevent the need for each new community to start from scratch. See Appendix E for progress on this priority initiative support through this National Strategy project, including a comparative table of model features, and other resources. See also Appendix F for information on understanding the cost structures of community solar and community wind models.

4.2.2 Create resources that assist community groups to decide which model to adopt or to develop a new model.

While the number of viable models is currently small, communities need to understand the decision making process to determine which model suits their circumstances. The development and adaptation of models by community groups around the country has generated a significant amount of knowledge that can now be further harnessed to maximise the productivity of new groups.

It is important to understand that the viability of any given model is co-dependent upon the prevailing context – policy, regulation, market, financing, community support, community capacity, etc.

As a new sector, and one characterised by significant disruption, both positive, like the plummeting cost of solar PV, and negative, like the volatility of policy, the viability of any model can be short-lived before it is out-competed by a better model or outmoded by changes in context.

As a result, community energy models need to be highly malleable and adaptable to maintain their viability within the constantly changing context.

This priority initiative involves developing and promoting a set of resources that will help community groups decide which, if any, of the existing community energy models would work in their context and to meet their aims and needs (see Appendix E for progress on this priority initiative, these documents can also be found on the Embark Wiki). The resources produced may be web interactive or a flow chart, survey-based or a combination of the above. If none of the models are fit-for-purpose, further resources would be available that:

- Outline key features of successful models,
- Outline key features of models that have been tried and do not work, and
- Guide groups through the key steps involved in developing community energy models.

¹¹ See Appendix E for summaries of the key behind the meter solar models of community energy, which are the main model types that are viable in the current context.

4.2.3 Encourage and promote community-commercial partnership models of community energy

One of the models of community energy is a partnership between communities and commercial renewable energy companies. This typically comes in the form of a community buying a part of a larger renewable energy project and thereby benefiting from the outcome of the project both economically and through an enhanced feeling (and reality) of ownership. If more commercial renewable energy projects were to take this approach it would substantially increase the breadth of community benefit and the number of community energy projects. This partnership approach also has a number of benefits for commercial companies as well, including but not limited to increased community support and social licence to operate. Thus, promoting this model of community energy would help to achieve a more rapid scaling up of the community energy sector and the wider renewable energy sector.

This partnership approach is standard in other parts of the world, particularly in Europe. However, it is a new approach in Australia and as such faces a number of barriers, including resistance within large renewable energy companies.

This priority initiative would likely take a two-pronged approach:

- Working with renewable energy companies to pilot community-developer partnership models and ensure they work to the benefit of both parties.
- Working with regulators to mandate or highly encourage this model through policy or regulatory interventions, as has been done in Denmark, the UK and in Australia in the ACT, as part of the ACT Government's large-wind auction.

4.2.4 Support the development of new energy efficiency, peak demand management, storage, bioenergy, thermal networks, and small hydro based models of community energy.

While community energy can include all possible supply and demand-side sustainable energy projects, in Australia the majority of community energy projects in development are currently based on wind and solar electricity generation. To ensure that a community approach to sustainable energy is applicable to as many communities as possible, and underpins a diverse renewable energy sector, models that utilise a wider range of technologies and demand side approaches are needed.

A range of actions will be required to achieve this, from some of the skills development initiatives outlined in the Capacity Building Sub-strategy, to the creation of appropriate market conditions using grant programs and various regulatory reforms (as outlined in the Finance and Funding and Policy and Regulatory Reform Sub-strategies).





4.2.5 Support community energy groups in setting up and developing community off-grid or micro-grid systems and business models.

Currently, most models of community energy take the form of grid-connected electricity generation. This priority initiative would look at how the community can play a more active role in distributing energy, in addition to the more traditional energy generation and energy saving models of community energy. Internationally, there are a number of community mini-grids (e.g. the Isle of Eigg in Scotland) and places where the community has bought-back their grid and/or manage the grid (e.g. Schönau in Southern Germany). Across Australia there are many communities that are not connected to the grid, or are in low population density areas on the fringe-of-grid, for whom centralised supply is subsidised. Those that are grid connected are facing increasing network costs associated with the significant network investment made in the period 2005-2014 across Australia. The growing risk of customers disconnecting from the grid on economic grounds, combined with the number of off-grid or fringe-of-grid communities means there is a potentially strategic role for a more community orientated approach to distributing energy. The best approach to explore this potential would be a series of funded pilot projects with complimentary policy and regulatory reform work as needed.

4.2.6 Develop models of community energy based on Environmental Upgrade Agreement financing models

Building on the work done by Moreland Energy Foundation on a low-income residential solar PV program backed by a council rates mechanism, similar to an Environmental Upgrade Agreement (EUA) facility, there is scope to expand this model of community energy. Currently, the NSW government is undergoing a review of EUAs and other states are investigating their implementation. This priority initiative will work to establish both an EUA model of community energy and the supporting policy conditions that enable the use of EUAs as a financing mechanism that addresses the capital intensive nature of renewable and other sustainable energy solutions.

4.2.7 Develop a community energy model that works regardless of government policy

The Australian renewable energy sector has been heavily influenced by policy instability resulting in boom and bust cycles. As such, there is interest in the community energy sector to develop a model that works as well as possible regardless of the state of government policy interventions. This is a substantial challenge, due to a range of factors such as the highly centralised nature of the Australian electricity sector, low wholesale electricity prices and regulatory barriers precluding economically viable grid export. Nonetheless, this priority initiative would help future proof the sector. In the short term, an example of an independent model might be crowd funded donation-based solar on community buildings (for example CORENA, Clean Energy for Eternity or Peoples Solar). This priority initiative would be carried out alongside the range of priority initiatives outlined in the Policy and Regulatory Reform sub-strategy, that outlines ways to increase policy certainty and support for community energy.

4.3 Background to these objectives and priority initiatives

4.3.1 What is a community energy model?

The term model has come to be used extensively in the community energy sector. It can mean a spreadsheet to calculate a defined set of project financials, a business model that outlines how a community energy project will work legally and financially, organisational models or delivery models of which captures a broader range of interaction with host sites, regulators, partners and community. This strategy takes a holistic approach to understanding a model of community energy, specifically including factors that distinguish community energy projects from commercial sustainable energy projects. Based on research of over 50 community energy projects, five meta-variables have been identified that make up a model of community energy (Figure 2):

1. Vision, values and motivations that guide the decisions of the community energy group
2. Technology
3. Finance (start up and operational)
4. Governance structure (including the legal structure and who is involved and in what roles, with what decision making power)
5. Community engagement.

Figure 2: Community Energy Development Framework¹²



The unique combination of decisions that are made for each of these five components influenced by a range of external factors distinguishes one community energy model from another.

A model of community energy is distinct from an individual community energy project which is the individual application of a model of operation and delivery to a specific location. Given that each community energy project will be situated in a unique setting and surrounded by unique conditions, no two community energy projects are likely to be exactly the same. However, two projects may be considered to employ the same 'model' if the majority of formative factors are common. The ClearSky Solar trust model of community energy is an example of a Community Energy Model which includes numerous projects (see Appendix E for a detailed outline of the ClearSky model). While each of the six community solar installations ClearSky has installed (at the time of writing) are slightly different (size, location, investment amount), the mechanism of organisational structure, raising of finance and communications are significantly similar to be considered a discrete model of community energy. This is popularly referred to in the community energy sector as the ClearSky Solar trust model.

¹² Hicks, J., Ison, N., Gilding, J. & Mey, F. (2014) Community-owned Renewable Energy: How to Guide, Community Power Agency, www.cpagency.org.au.



4.3.2 Diversity vs scalability of community energy models

Community energy projects come in many different shapes and sizes. Community energy projects that are more strongly embedded in their community are typically driven by members of that community. As such, the model of community energy developed is in large-part shaped by the local community needs, local availability of natural resources, technologies and funding, as well as levels of community support. Thus, there is a significant level of diversity in the models of community energy around the world.

Developing a successful model of community energy that is both economically viable and beneficial to the community is challenging. The US National Renewable Energy Laboratory describes it as “solving a rubiks cube of variables”.¹³ For example, there are significant challenges in securing an “off-take” agreements (electricity sale for community energy projects and the associated implications for the financial viability of a project). The fact that the sector is new, with innovation occurring quickly and many groups working in isolation has led to a significant duplication of effort by groups developing community energy projects across Australia.

This strategy has identified three key needs that the priority initiatives outlined aim to fill.

1. The need to refine existing and develop new models of community energy that can be easily adapted and scaled (in number rather than in size).
2. The need to develop resources that make it easy for community groups to understand and start to implement and adapt existing models.
3. The need to communicate and widely publicise these models, tools and resources and build the capacity of groups to use them (note that priority initiatives associated with the latter need are outlined in the Capacity Building Sub-strategy).

Within this context, an important tension must be recognised – in seeking to develop scalable and replicable or adaptable models of community energy, some of the potential diversity of community energy models may be lost. If the community energy sector is to achieve its full potential, both in terms of scale and deep benefits to the Australian community, a focus on fostering an environment where new models of community energy can be developed must be retained. That is, the sector must be able to scale and replicate, but also maintain a commitment to innovation. The Community Energy Model Maturity Index (Appendix D) has been created through this project to help policy makers to understand the stages projects and models will go through and to facilitate creating the conditions that both foster innovation and allow community energy models to mature and replicate.

Further, many organisations have invested significant time and resources in developing new models of community energy and as such they are considered organisational intellectual property. As such, any priority initiatives that aim to facilitate the more widespread promotion of these models, must approach the task sensitively and negotiate arrangements that will bring mutual benefit to both the original organisation and the wider community energy sector.

4.3.3 Snapshot of community energy models

Whilst significant work has been done to collate, describe and share the various “models of community energy” operating or in development through organisations such as Embark, there is still opportunity for greater development and promotion of models as they more rapidly emerge on the Australian landscape.

¹³ www.greentechmedia.com/articles/read/three-new-community-funded-solar-projects-go-online-in-colorado

As part of developing this National Community Energy Strategy a survey was undertaken, with participation from 38 community energy groups. The models section of this survey first asked groups to identify which stage they are at in the development of their project (refer to the Community Energy Model Maturity Index in Appendix D for a description of project stages) and then based on the stage of development asked groups to identify the features of their project according to the five model factors: vision, organisational structure, technology, finance and funding, and community engagement as well as pertinent external factors. It should be noted that applies to community generation projects more than those focussed on community efficiency programs or retailing.

Of those surveyed, four groups reported being operational (noting not all of the 10 operational projects responded to the survey and some groups who responded are responsible for more than one operational project), 29 were in the development stages (stages 3 to 6 Appendix D) and five were at stages 1 to 2 (forming a group and identifying technology). While preliminary analysis was undertaken to understand the operational and developing models of community energy, it was not possible to ascertain the detail of a comprehensive model of community energy through short answer questions provided in a survey.

In addition, descriptions of six operating models of small-scale solar have been developed as resources for the community to add to the growing number of resources for the sector (see Appendix E). In addition, work has been done to better understand and describe the cost structures of community solar and community wind models (see Appendix F).

It is clear further work is required to more fully understand:

- Other models of community energy beyond the six outlined, both operational and in development, including the nuances of how they work.
- The key success factors for these models.
- Elements of community energy models that have been attempted and have not worked and will not work in the current operating context. Noting that Appendix D does document some of the key constraints.
- The process of how existing models of community energy can be adapted to new communities and new contexts.
- The key components and steps in developing a new model of community energy.

4.4 Additional information

For more information relating to or supporting the Community Energy Models Sub-Strategy, see:

- Appendix D – Community Energy Model Maturity Index
- Appendix E – Behind the Meter Community Solar Model Resources
- Appendix F – Community Energy Cost Analysis & Cost Reduction Potential report, which describes the cost and income structures of a number of key community energy models
- The Embark wiki, which includes 150 articles on how to build projects, toolkits and case studies
- Preliminary survey analysis of community energy models (working document, available on request)
- Community-Owned Renewable Energy: A How to Guide developed by the Community Power Agency in 2014 with funding from the NSW Office of Environment and Heritage.

5. SUB-STRATEGY II:

Funding and Finance

This sub-strategy addresses the funding and finance needs of developing community energy projects and a wider community energy sector.

5.1 OBJECTIVES

- Increase the availability and accessibility of funding and finance that community energy projects need to a point where they are operating
- Progressively reduce costs of community energy projects to increase their economic viability.
- Maximise revenue streams available to community energy projects.
- Secure adequate resourcing for community energy support providers.

5.2 PRIORITY INITIATIVES

5.2.1 Support and further develop community energy grant funding.

The 2012 Australian Community Energy Opportunities and Challenges report¹⁴ identified the lack of early stage funding as one of the biggest barriers to community energy projects in Australia. The early stage of community energy projects involves taking a project from an idea to a tangible plan: taking it through the pre-feasibility, feasibility and planning approval stages to a point where the projects are investment ready. These stages are the most risky for any renewable energy venture. However, unlike private enterprise or government bodies, community actors do not typically have large reserves of capital upon which to draw.

UK experience, particularly in Scotland and Wales, shows that a relatively small amount of money in the form of a government grants make a significant difference to the development of community energy projects and a broader community energy sector.¹⁵ Further modelling conducted by Marsden Jacobs and Associates quantifies the impact of a community energy grant fund at different levels.¹⁶

This priority initiative entails:

- Firstly working with community energy groups to support them to apply for any appropriate existing funding programs, and
- Secondly working with political parties, philanthropic and government organisations to secure commitment to developing more targeted community energy grant program/s and then working with them to design the program to ensure that it meets the needs of the community energy sector.

5.2.2 Increase community energy groups' confidence in donation fundraising.

Donation fundraising using either traditional fundraising methods or online crowd funding platforms is one of the best ways community energy groups can secure the preliminary funds they need to get a community energy project from the inception to the social and technical feasibility stages. While monetary costs involved in this stage can be minimised with large amounts of volunteer effort, substantial costs still remain, particularly in areas which require professional and/or technical expertise. Donation based fundraising is also a great way of proving that a project has support from members of the community.

While all fundraising campaigns take work, crowd funding makes it easy for supporters to make a pledge. Additionally, a number of crowd funding providers have developed relationships with philanthropic organisations, governments and corporations whereby they provide matching funding to projects who run successful crowd funding campaigns.

To date, we know of seven community energy projects have undertaken crowd funding campaigns, although there are also a number currently underway. Given the potential for increased use of this funding approach, ensuring its success is a priority initiative of this strategy.

14 Ison, N., Hicks, J., Gilding, J. & Ross, K. (2012) The Australian Community Renewable Sector: Challenges and Opportunities. Accessible at: www.cpagency.org.au/index.php?pg=resources

15 Hicks, J. & Ison, N. (2011) Policy Brief, Community Renewable Energy Research Report, prepared for New England Wind. Accessible at: http://cpagency.org.au/wp-content/uploads/2014/03/HicksIson_NEW-Report_Final15Jun20111.pdf

16 <http://cpagency.org.au/wp-content/uploads/2014/03/MJA-Report-to-CCF-Final-14Jun13.pdf>

5.2.3 Work with institutional and sophisticated investors to develop a revolving finance fund.

In the medium-to-long term, if the community energy sector is to grow and thrive it cannot rely on grants (although there is need for them in the short-to-medium term). As such, work is required to develop a fund to finance individual projects once models of community energy have been proven, de-risked and costs reduced. This fund should be a revolving fund, so that when community energy projects pay back loans or provide equity returns, they can be reinvested in loans to new community energy projects. As such, seed capital is required to establish the central fund, and the design details and eligibility criteria dictate how the fund is sustainably replenished over time.

An international example driven at the local government level is the Cornwall Revolving Loan fund¹⁷ in the UK.

Through the development of this Strategy, the authors met with six financial institutions interested in the idea of providing equity, debt and (potentially) early-stage loans to community energy projects. This priority initiative would involve building on these relationships and modelling and supporting the further refinement of financial offerings to ensure that they meet both the needs of the financial institution or investors, as well as the future needs of the community energy sector.

5.2.4 Foster innovative approaches to electricity retailing.

Selling electricity is a key component of a community energy generation projects. Currently, the electricity retail market is not set-up to proactively support community energy projects either through the provision of a fair price for electricity or easily allowing member owners of community generation projects to purchase the electricity from the projects they have a stake in. At a regulatory level, the National Electricity Rules do allow for exemption from full retail licensing of smaller and/or specialist retail businesses, particularly for energy being sold directly to a consumer rather than via the network. While this is a partial solution for some models of community energy, it does not address the full range of issues. As such, this priority initiative will investigate the viability of community focussed retail operations and other innovative retailing strategies that will more fully enable community investment, ownership and focus on local provenance from renewable sources.

5.2.5 Develop centralised services that can be shared between different groups

Community energy groups face higher costs because they are often developing projects at a smaller scale to typical commercial energy projects. These “economies of scale” related costs can be addressed through the development of a series of shared services or shared platforms.

A shared service platform could centralise some common requirements across community energy projects such as investor share registry, auditing, compliance, registering and receiving payment from members. One international example is Abundance Generation in the UK that provides a platform for community energy groups to secure members and administer funds.

One possible structure would be for each subscribed group to pay a small fee to cover the time of a centralised person or people to undertake these tasks. The downside of the efficiency benefit is the potential reduction of local job creation, and as such a shared service platform initiative should work closely with community energy groups to balance local benefits with the efficiency dividends.

Specifically, this priority initiative would investigate what service needs are common to a large number community energy groups and whether these services could be delivered at lower cost if they were aggregated across many community energy groups.

Note that the cost reduction analysis (Appendix F) suggests that a shared service platform is likely to be most useful for larger community energy projects. For example, Hepburn Wind estimates that shared infrastructure tailored to the community energy sector could reduce ongoing administration costs by 10%. Smaller behind-the-meter community solar models are already lean and shared infrastructure may be more expensive than what a group can deliver themselves. This is in part because groups often provide these services in-kind, whereas a centralised community administration service (e.g. that would manage dividend payment etc.) would have to be paid for by groups.

This priority initiative would be complimentary to shared templates or project resources outlined in Section 4.2.

¹⁷ www.cornwall.gov.uk/environment-and-planning/green-cornwall/green-communities/cornwall-revolving-loan-fund-for-community-renewables.

5.2.6 Develop a funder roundtable to better connect funders and finances with community energy projects and priority initiatives.

Growing the financial resources of the community energy sector to both deliver community energy projects and to deliver the priority initiatives outlined in this strategy (which in turn will make it easier to deliver projects) is a clear priority. One of the best ways to do this is to convene an ongoing Community Energy Funder Roundtable. The purpose of this Roundtable would be to bring together a range of potential funders and/or funding support organisations of community energy including government agencies (state and federal), philanthropic organisations, ethical finance institutions, impact investors and crowd funding platform providers, to:

- Identify funding niches for different individual funders, or funder types,
- Identify areas of potential funding overlap and thus collaboration and minimise any potential duplication of effort,
- Find matches between funders and priority projects or priority initiatives, and
- Raise knowledge within a range of funding organisations about the current funding needs, priorities and opportunities for impact within the community energy sector.

Ideally this Roundtable would meet two to three times per year and have ongoing virtual communication. The Roundtable could be coordinated by an existing funder or funding support organisation committed to community energy such as the NSW Office of Environment and Heritage or the Australian Environmental Grantmakers Network or by the Coalition for Community Energy. Ideally, it would function as a partnership between C4CE and a funder or funding support organisation.

5.3 Background to these objectives and priority initiatives

Community energy projects are quintessential social or community enterprises. Depending on the motivations of a particular community energy group, they tend to have a social and environmental remit, as well as an economic one. As part of the economic remit, community energy projects must address three main financial questions to ensure that their model is viable:

- How do they cost-effectively secure the funding and finance they need to get a project to a point that it is operating and generating income?
- How can costs be reduced in both the start-up and operations phase to increase their financial viability?
- How can income streams be maximised once a project is operating?

These questions form the basis of the Finance and Funding objectives and wider sub-strategy.

5.3.1 Community Energy Finance and Funding Framework

There are several potential funding mechanisms available to community energy projects. However, determining the most appropriate funding mechanism depends on the relevant developmental phase of a given community energy project.

As such, the Community Energy Funding and Financing Framework, shown in Figure 3 below, identifies three key developmental parameters that need to be considered in defining the finance and funding needs of community energy projects:

- Project stage
- Project size
- The degree to which a model is established or 'proven'.

There are many stakeholders interested in supporting or being involved in the funding and/or finance of community energy projects. Many are currently looking at different support options, however, when interviewed through the National Strategy process, the current lack of community energy projects near 'investment-ready' stage was noted as a clear barrier to the development of sophisticated funding mechanisms.

Project Stage

These are the generic stages for the development of a community energy project. Project stages span Inception to Operation and what is involved in each stage varies slightly for different technologies and different models. When community energy literature talks about "early-stage funding", what is generally meant is the funding required to get a project from inception through to having planning approval and a viable model i.e. are investment ready.

The boxes in the framework diagram in Figure 3 on the following page identify the funding types that are best suited to the different community energy project stages.

Project Size

Community energy projects cover a range of scales. This model suggests an approximate figure of \$1 million being the cut-off point between 'small' and 'large' projects. The authors posit that in the capital raising stage communities are likely to be able to raise sufficient capital through a large number of community investor members for projects less than \$1 million, whereas projects greater than \$1 million may require some debt financing or equity from institutional investors. This figure is indicative and the exact cut-off between small and large projects will differ from project to project.

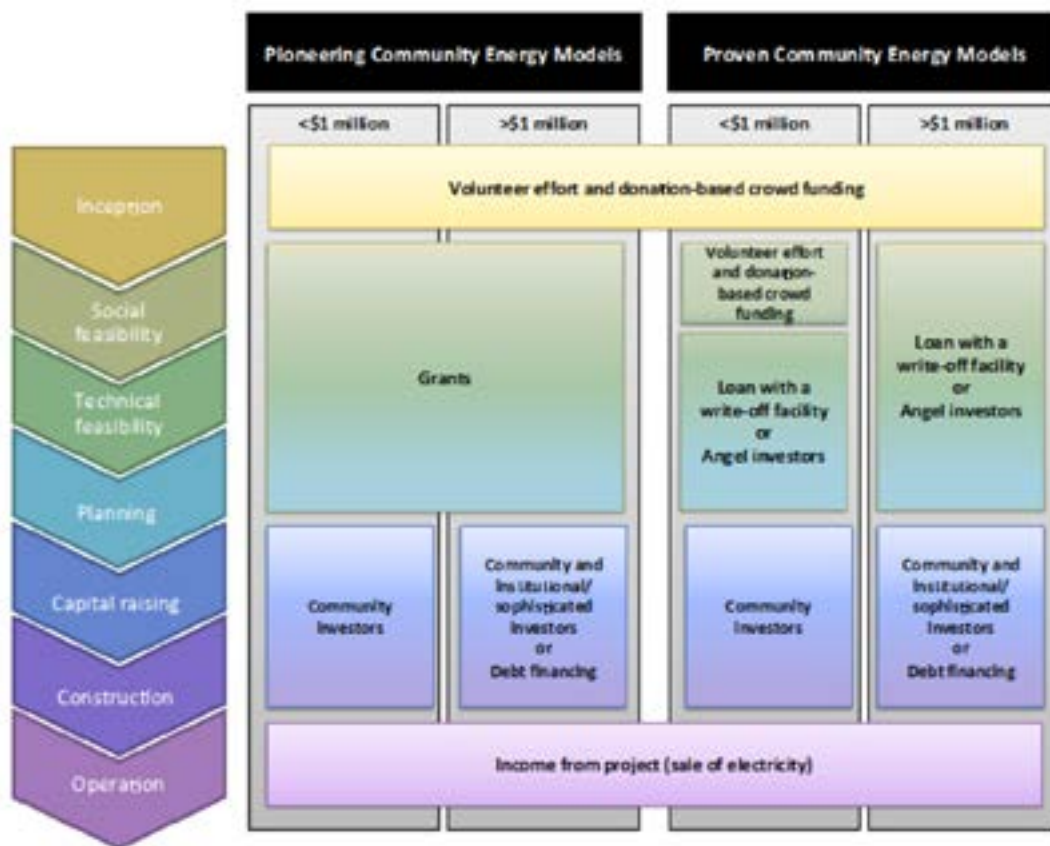
Degree to which a model is proven

As with technology innovation, establishing a new community energy model¹⁸ is an innovative process. There are two main phases in the development of community energy models:

1. The pioneering phase, where a model of community energy is not yet financially viable under current market conditions. Note that different models will take different numbers of pilot projects to bring down the costs, set up processes and maximise income streams. It is likely the more complex the model and larger the model of community energy the more 'pilot' projects will be needed to shift the model from the pioneering to proven phase.
2. The proven phase, where that has been actively demonstrated to be financially sustainable in current market conditions, with at least one project operating successfully and the supporting resources and processes are in place to facilitate rapid replication by other groups.

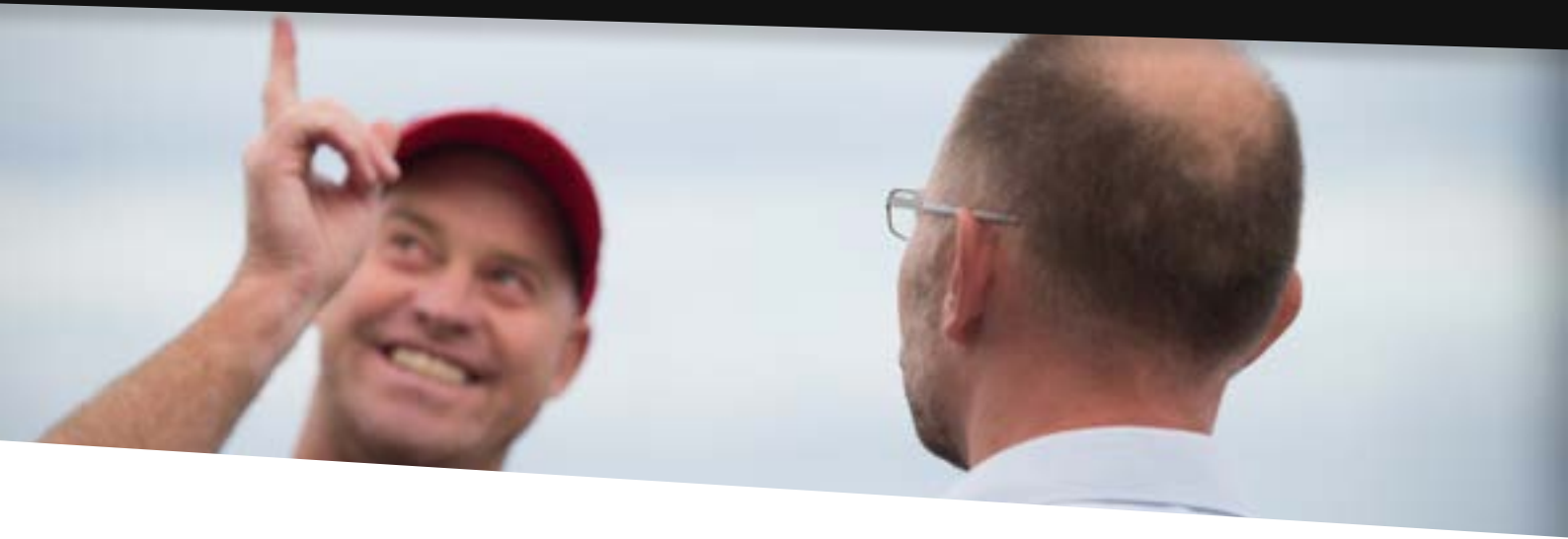
The Community Energy Model Maturity Index in Appendix D outlines the processes by which community energy models move from the pioneering to proven phase of development.

Figure 3: Community Energy Finance and Funding Framework¹⁹



18 The definition for a "community energy model" is provided in the Community Energy Models sub-strategy

19 Note that volunteer effort and in-kind services are provided throughout the development of a community energy project, however this Framework identifies those times when volunteer effort is most relied on.



5.3.2 Implications of the Framework

Securing Funding and Finance

As illustrated in the Framework, (Figure 3) grant funding is required for new models of community energy projects, regardless of size that are in the early stages (to the point that they are investment ready). Once these models have been proven the authors suggest that alternative models of financing can be implemented. Thus, grant funding can be seen as helping to prove the models and take the sector towards maturity.

The grant funding, donation funding and revolving financing fund priority initiatives have been developed based on the analysis involved in developing the Finance and Funding Framework.

Reducing Costs

A series of cost categories for community energy projects have been identified:

1. Pioneering costs
2. Institutional costs
3. Learning costs
4. Lack of economies of scale costs
5. Unavoidable costs

Pioneering costs

Developing new viable community energy models in the current operating context is a major barrier for the community energy sector. Conceiving, testing, trialling/piloting and refining a new model of community energy takes resources. The first few example projects of a particular community energy model involve 'pioneering costs' – that is, the learning and time and effort required to establish and refine new organisational infrastructure for a specific project. The costs per project are higher for these pioneering initiatives than they will be for future applications of the same model.

Institutional costs

There are a number of institutional barriers to community energy projects, these include but are not limited to: securing a fair price for electricity, accessing timely and affordable grid connection services and approval, complying with ASIC and tax regulations, working through planning processes with state governments and councils on various aspects of project development and delivery.

Institutional costs are the costs that are associated with establishing standard institutional arrangements for the community energy sector and overcoming the institutional barriers above. Part of this cost is the time that it takes for community energy proponents to engage with and educate key stakeholders (such as grid companies and retailers) who are unaware of community energy and how projects operate. However, on certain issues such as crowd-financing engaging with stakeholders is not sufficient and regulatory or policy change will be required, which also comes at a cost. For example, altering the financial regulation rules to facilitate and encourage investment-based crowd funding, as is in place in the United States and United Kingdom. As such, some of these costs (the more stakeholder engagement based ones) could be addressed through delivering pilot projects, and targeted sector stakeholder engagement (see the draft National Community Energy Strategy – Profile Raising Sub-Strategy for example actions) while others will need to be addressed by policy or regulatory reform.

Learning costs

One of the biggest challenges for the Australian community energy sector that has emerged recently is the duplication of effort by community energy projects and groups. A related challenge is access to the skills and knowledge needed to deliver viable and beneficial community energy projects.

As distinct from pioneering costs, these are the learning costs that every new community group will have to work through. The local context and mix of community group members all make for unique community energy projects, regardless of employing an established model of community energy. This learning process may lead to task overlap and wasted effort that could be reduced through a series of capacity building initiatives, such as establishing a database of experts or mentoring groups.

Lack of economies of scale costs

Community energy projects also face higher costs associated a lack of economies of scale. For example the cost of administering membership dividends; commercial ventures that deal with many members tend to be at a much larger scale and thus project administration is a smaller proportion of the cost. This is not the case in community energy projects where financial compliance and administration currently significantly erodes the return on investment possible for community energy projects. While this presents a challenge to the sector, several sector building initiatives outlined in this strategy are targeted to overcome these issues.

Unavoidable costs

Together with specific technology costs, site selection, host negotiation and more there are costs associated with developing a community energy project that deliver local social and environmental benefits, such as the cost of community engagement activities. This is the one area where while costs can be reduced somewhat, there will always be a cost and after a point, any further cost reduction will depend on a series of choices that a community energy proponent makes about the balance between competing commercial and non-commercial benefits. This category of unavoidable costs is included to highlight that some costs inherent to community energy will not be able to be reduced or removed.

Maximising income streams

While the Framework does not touch on maximising income streams, the National Survey of Community Energy Groups highlighted the biggest challenge in this regard is the lack of certainty around energy policy. A lack of policy certainty has long faced the wider renewable energy industry and with the growth of a community energy sector the impact of this policy uncertainty now extends to community enterprises across the country. Policies that specifically effect community energy income streams are the Renewable Energy Target and Feed-in Tariffs. These measures are discussed in the Policy and Regulatory Reform Sub-Strategy. Additionally, measures that could increase the revenue streams for community energy projects are those that also enable investors or members of community energy projects to directly purchase energy from the projects they invest in, thereby closing the loop. Example mechanisms include Virtual Net Metering, innovative retailing approaches such as establishing a community retailer or working with an existing retailer to establish a mutually beneficial relationship.

This analysis forms the basis for the innovative retailing priority initiative as well as the Virtual Net Metering priority initiative, discussed as part of the Policy and Regulatory Reform Sub-Strategy.

5.4 ADDITIONAL INFORMATION

For more information relating to and underpinning the Funding and Finance Sub-Strategy, see:

Appendix F – Community Energy Cost Analysis & Cost Reduction Potential

Government Support Options for Community Energy: A Review of Best Practice International Policy undertaken by Community Power Agency in 2014 as a part of a larger review led by ISF of the NSW Government's Community Energy Funding Program.

Community Renewable Energy Fund: Modelling undertaken by Marsden Jacobs and Associates in 2013 for the Coalition for Community Energy

6. SUB-STRATEGY III:

Capacity Building

This sub-strategy outlines what is needed to build the capacity of community energy proponents to successfully implement and deliver their projects.

6.1 OBJECTIVES

- Develop the community energy sector into a vibrant, robust, highly skilled, and adaptable sector.
- Build capacity through a number of innovative communications, networking and skills development initiatives.

6.2 PRIORITY INITIATIVES

6.2.1 Develop dynamic peer-to-peer networks and share learning through collaborative communications tools.

Currently, there are many community energy groups facing similar challenges, however the structures to facilitate dynamic information sharing are fragmented and not yet effective. A strong desire for peer-to-peer learning between community energy proponents has emerged from research underpinning this strategy. Given that Australia is a large country, an online platform to facilitate two-way communications between community energy groups is a strategic priority. There are many online platforms that could be used, varying from simple to highly complex. One favoured means would be the establishment of a closed Facebook group. Such a group, could be an effective tool for groups to pose questions and provide a proactive channel for groups to take important steps towards project implementation without exhausting their or the sector's limited financial assets. This priority initiative would involve the establishment of such a mechanism, recruiting members and monitoring its use and if it is not meeting the needs of community energy groups, alternative dynamic peer-to-peer communications platforms could be investigated.

6.2.2 Develop a community energy training, mentoring and networking events program

Community energy project proponents indicated strongly throughout the national survey that they require support across a range of areas, particularly fundraising, technical and legal issues, and negotiation and communication skills. They further identified a preference for access to peers and experts ideally through channels that do not require significant financial or human resources. Developing a well-resourced and targeted mentoring, training and networking events program delivered at a combination of levels – national, state, regional and virtual (webinars) would help meet these needs. While a number of community energy support organisations provide some training and mentoring, the opportunity of this priority initiative is to create a better-coordinated and more comprehensive targeted approach to community energy mentoring and training.

The inaugural Community Energy Congress is a great example of a networking and training event at a national level. It received overwhelmingly positive reviews, providing an opportunity for community energy proponents to share knowledge and ideas, receive training in identified skills gaps, be inspired and feel like they are part of a larger sector. However, it is expensive to bring people together nationally. While the Community Energy Congress should be repeated, it should be a bi-annual event and supplemented by a calendar of events developed for delivery at a state, regional and virtual level. For example, a series of webinars hosted by experts in particular problem areas could be produced at relatively low cost and with a high level of accessibility when combined with social media and existing forms of support and engagement.

This priority initiative will help address the desire for "face to face meetings (or via digital means) of people who are going through the same learning experiences" (National survey respondent), as well as addressing skills gaps and creating strong peer-to-peer networks. It will involve building on the research undertaken and the pilot training program at the Congress to target the most needed areas of skills and knowledge to the most appropriate delivery form.

6.2.3 Develop an authoritative central web repository of information and resources that is known and used

There is already a central web repository for community energy information and resources in Australia – the Embark Wiki. The wiki currently hosts 150 articles, has several hundred unique visitors from all over the globe every month and importantly, has inbuilt architecture to support the growth of the needs of the sector. The research undertaken indicates that there is a commitment to using and strengthening existing resources. However, upgrades are needed to make the existing web repository more dynamic and user-friendly and consequently more widely promoted and utilised. As such, this priority initiative would entail identifying the needs and gaps of the central web-repository, supporting an update to meet these needs, doing a stocktake and collation of the best available resources, inviting community energy stakeholders to upload resources and then funding the ongoing maintenance of the website. It is important that any central repository is used, so the priority initiative must also include promotion of the website generally and new resources located on it specifically.

6.2.4 Develop a database for stakeholders to register the support they can provide/ require e.g. potential solar hosts register.

There are many people and organisations interested in developing or supporting the development of community energy projects and a wider sector. One of the biggest challenges is matching up needs with offers of assistance. This priority initiative is to develop a web-based community energy matching service (colloquially titled RE-Harmony). This would enable community energy groups to put out requests for support and various other organisations – legal, marketing material etc., to offer assistance. In particular, it could be useful for matching community groups with potential host sites. Securing interested and appropriate host sites is currently one of the biggest challenges facing both community wind and solar projects.

6.2.5 Coordination and backbone support

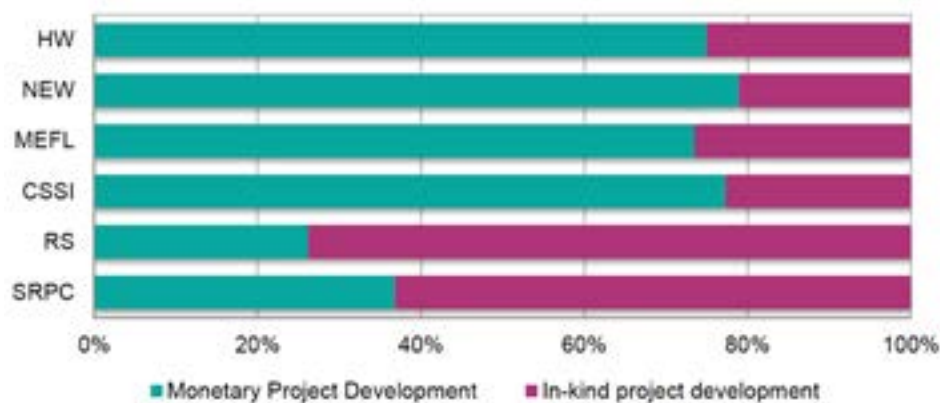
Research shows there is a broad commitment to a greater level of collaboration within the community energy sector. However, collaboration at scale requires a degree of support and coordination. This priority initiative is essentially the establishment and ongoing operation of the Coalition for Community Energy, which applies a collective impact framework²⁰. Internationally, those pioneering a collaborative impact approach to creating change have identified the paramount importance of having a 'backbone support organisation'.²¹

A structure that facilitates collaboration and is well staffed and resourced, will help minimise duplication of effort, support the resourcing and development of the priority initiatives outlined in the wider National Strategy. This would grow the capacity of the community energy sector to achieve the vision outlined.

6.3 Background to these objectives and priority initiatives

Research undertaken as part of the community energy cost analysis (Appendix F), provides an indication as to why capacity building is so important. Figure 4 shows that the first project of six models of community energy operating or in development have incorporated significant in-kind time and services. In-kind contributions are in the order of 20-70% of the total cost of developing a project (i.e. excluding capital or operating costs), and come down rapidly when the path to project delivery is more clearly established. To make community energy accessible to many groups (especially those applying models developed by other groups) and easier to develop projects, the capacity of groups must be developed to both reduce and ensure that scarce in-kind time and services go to the best use.

Figure 4: Monetary vs in-kind project development costs by model



²⁰ www.collaborationforimpact.com/collective-impact/

²¹ Turner, S., Merchant, K., Kania, J. & Martin, E., 2012 'Understanding the Value of Backbone Organizations in Collective Impact', Stanford Social Innovation Review. Accessible at: www.ssireview.org/blog/entry/understanding_the_value_of_backbone_organizations_in_collective_impact_3

"An online hub with up-to-date news, resources... is by far the most critical tool we could use as it is inclusive and can be accessed from anywhere by anyone."

– National survey respondent



To identify the capacity building assets and needs of the Australian community energy sector, three pieces of research were undertaken:

- An internal review of project partners, which are community energy support organisations
- A national survey of community energy projects
- An examination of the services and support provided by international organisations that support community energy projects/sectors.

Through this research, there is strong evidence of a commitment to a highly collaborative approach to developing the capacity of the Australian community energy sector. Key findings to emerge from the research include:

- Community energy project proponents indicated strongly throughout the national survey that they require support across a range of areas, particularly access to peers and experts. However, community groups are also time and resource poor, so work is needed to ensure support is delivered through channels that do not require significant financial or human resources from community groups.
- Strong peer-to-peer networks are needed to facilitate more effective participation and shared learning across the sector.
- Community energy proponents need to further develop specialist skills and knowledge to deliver successful community energy projects, specifically in the areas legal, technical and financial expertise.
- Effective and easily accessible channels for communication amongst sector support organisation, projects, and other relevant networks are needed.

6.3.1 What capacity building support already exists?

The most cited capacity building assets of organisations supporting community energy groups are people involved who are skilled in various aspects of community energy as well as strong research capabilities to support the growth of the sector. Existing capacity building tools identified were the Embark Wiki and newsletter, the Community Power Agency (CPA) 'How to Guide', 'Community Energy Map', and inception workshops, training resources; support provided by Starfish Initiatives and NSW Office of Environment & Heritage (OEH) regional coordinators and the mentoring programs by Embark, CPA and Starfish. This indicates there are tools and resources upon which to build, however currently these tools are either under-utilised, under developed or fragmented. This strategy builds on these tools and addresses their weaknesses as well as identifying and proposing initiatives to fill gaps.

6.3.2 Potential skills and knowledge gaps

Community groups and support organisations were asked what they thought the main skills and knowledge gaps are inhibiting community groups developing successful community energy projects. The starting list of skill and knowledge areas important for community energy included: project management; financial management; renewable energy technologies, energy efficiency and peak demand management; operation of the energy system/market; negotiations with potential hosts, developers, grid companies and retailers; community consultation, engagement & education; volunteer and consultant coordination and management; legal structures; group governance; communication and media; and fund-raising, covering grants, sponsorship and capital raising.

Of all the options listed, capital raising was identified as the biggest skills gap with 75% of groups answering that this skill 'needed strengthening' or was 'non existent', followed by more general fund raising skills, with 57% indicating their capacity needs strengthening or is non existent. Additionally, 58% of groups indicated that their capacity to negotiate with potential hosts, developers, grid companies and retailers needs strengthening or is non existent, while knowledge of the operation of the energy system/market was an area that 56% of groups identified as needing strengthening.

Survey respondents also noted other important characteristics for community energy proponents. For example, "leadership is the single most important skill I've personally had to draw upon. After 9 months of work, morale is critical. Each community energy group needs a leader who is capable of keeping people happy, and inspired."

Interestingly, differences exist between the top skills gaps identified by community energy groups, community energy support organisations, and groups at different stages of development. Notably, community energy groups indicated that knowledge in areas such as project management and governance is pretty well established. The groups felt generally well equipped in communications and media (71% reporting sufficient or abundance of capacity), group governance and financial management (both with 67% of respondents reporting sufficient or abundance of capacity). This is in contrast to a gap identified by support organisations, many of which see group governance, communications and project management as areas needing attention.

The contrasting views around capacity building skill gaps might be attributed to differing involvement in the community energy sector by these two groups of stakeholders: support organisations might see challenges that groups in early stages of development haven't yet encountered. Another reason might be that everything is a challenge and while it might be possible to figure out skills such as communications 'on the fly', it is not possible to do the same with technical knowledge. Therefore, this does not necessarily mean it is not a capability gap, but rather one that is less urgently in need by community groups.

In researching capability gaps it also emerged that the structures are not in place to easily facilitate community energy groups to connect with each other, renewable energy actors and wider energy sector stakeholders. This is the basis for the networking and two-way communications platform based priority initiatives outlined in this sub-strategy.

6.3.3 Mechanisms to build capacity

Community energy proponents were asked which mechanisms they thought would be most appropriate to fill knowledge gaps. The list of possible responses was: outsourcing to experts, written resources, access to peers/ experts, formal training and formal mentoring.

Participants ranked the need for greater access to peers and experts consistently ahead of all other options, showing a clear need for more dynamic, collaborative, two-way communications platforms to foster peer-to-peer learning, support and leadership. Formal training and mentoring were also identified as useful in specific circumstances.

Community groups were also asked which mechanisms they most often used to find out information about community energy. The possible options provided were events, websites, newsletters, social media and email lists. Websites and events gained the highest number of responses. These preferences have informed the focus of the priority initiatives outlined in this sub-strategy. Newsletters, social media and email lists were ranked as having lesser usefulness.

Surveys of community energy support organisations strongly indicated a preference for utilizing, strengthening and better promoting existing available resources and mechanisms of delivering information and capacity building programs. Once the bounds of these existing resources and channels are exhausted then effort should turn to filling gaps with new programs or capacity building infrastructure.

6.4 Additional information

For more information relating to and underpinning the Capacity Building Sub-Strategy, see:

Community-Owned Renewable Energy: A How to Guide developed by the Community Power Agency in 2014 with funding from the NSW Office of Environment and Heritage.

The Embark wiki which includes 150 articles on how to build projects, toolkits and case studies

Capacity Building Detailed Research Summary (working document, available on request)

7. SUB-STRATEGY IV: Profile Raising and Stakeholder Support

This sub-strategy addresses the need to raise the profile and build broad community support to make community energy 'mainstream'.

7.1 OBJECTIVES

- Increase key actors' awareness of community energy and its benefits.
- Assist community energy groups to communicate the benefits to their local community and the wider public

7.2 PRIORITY INITIATIVES

7.2.1 Create an evidence based communications framework and strategy for community energy.

Already, community energy proponents and support organisations across Australia have wide social media networks of tens of thousands of supporters to draw on to build the profile of community energy. However, there is a lack of clarity, consistency and cut-through of the messages disseminated by community energy actors. As such, this priority initiative involves the development of an evidence-based communications framework for community energy that can be used by all actors interested in building support for community energy. This framework would include key messages and frames that the sector seeks to promote, as well as suggestions as to how these frames and messages can be adapted to target audiences. In addition, this priority initiative will include resource support to groups to tell their story and the national story of community energy through a range of channels from public speaking to social media to mainstream media. National and global interviews show that targeting communications through mass-membership organisations in their distinct voice and framing will result in greater trust and support. As such, any shared communications framework and strategy should be adapted to the tone and context of each project or organisation delivering it.

7.2.2 Create a strategy for pitching community energy to and building partnerships with key 'gatekeepers'.

To achieve the policy, economic and social conditions needed to encourage broad uptake of community energy, engagement with key gatekeepers is needed. Example gatekeepers include but are not limited to network providers, state and federal governments, potential hosts/landowners, energy retailers and finance and funding networks. Along side general profile raising of community energy, this engagement should be informed by a strategy of making clear asks that are within the power of the specific gatekeeper to action, in ways that are understandable, compelling and where possible mutually beneficial.

"Community energy can offer direct and potentially deep collaborative links to a community where a project will be hosted. This has long-term benefits for a project and influences policy and other communities. This reduces the risk and potentially the cost in the long term.."
Anonymous Renewable Energy Developer

7.2.3 Recruit influential champions to promote community energy.

One successful approach to raising the profile of an issue is to recruit credible, well-respected and influential individuals and organisations to champion community energy and help create the circumstances to put it on the public and policy agendas. This priority initiative will identify, recruit and work with a small number of champions to build support for community energy in targeted as well as public arenas.

7.2.4 Engage farming communities to co-create regional development opportunities.

Farmers are one of the key allied stakeholder groups identified in the strategy development process. Farmers stand to benefit from and have the ability to add considerable profile to community energy projects. This priority initiative looks at increasing the participation of farmers in community energy projects in order to ensure that more farmers benefit from and champion community energy projects.

7.2.5 Create a local government and community energy network.

Local governments can play a large role in the development of community energy. This priority initiative involves the establishment of a network of council actors, to share information and look into how to increase council support for community energy and remove any barriers for councils doing so.

7.2.6 Develop a partnership strategy for targeted allies of the community energy sector.

Internationally, coalitions of organisations with a common commitment to community energy have played a significant role in raising the profile and building broad support for community energy. Already in Australia the framework for a coalition approach has been developed through the establishment of the Coalition for Community Energy, however there are numerous key organisations and allies that are not currently involved. This priority initiative entails building relationships and awareness raising with identified allied organisations. Examples include but are not limited to local government, commercial renewable energy companies, business networks, NGOs and other mass-membership organisations, community organisations and networks (such as Landcare, social housing providers, Aboriginal Land Councils) and medium-to-large energy users (as prospective hosts or users of community energy projects and generation).

7.2.7 Build local, state and national multi-party policy support for community energy.

Political parties play a significant role in shaping both policy and the public debate within Australia. The breadth of community energy benefits in the social, economic and environmental spheres creates a unique combination of cross-party appeal. As such, working closely with all political parties to ensure they have community energy policy and that they are actively promoting and championing community energy is the focus of this priority initiative.

7.3 Background to these objectives and priority initiatives

This Strategy serves to overcome key barriers communities face in mainstreaming community energy. International experience shows that informing communities, all levels of government and sectors that are natural allies will help rapidly accelerate the creation of community energy projects that are built by communities to benefit communities.

The authors of this strategy seek to capitalise on the community desire to decarbonise their local area. The inclusive and accessible nature of community energy enables a broad population to be able to participate in a clean energy future. Community energy further provides the opportunity to build strong local economies and a strong sense of community and is a key vehicle for bringing wider social license and development to the broader renewable energy sector.

While community energy has a wide range of benefits and thus broad appeal, research shows that community groups and other actors need assistance to communicate and raise the profile of this sector. Further, multiple relevant stakeholders and sectors are yet to be brought on the journey of the value and opportunity that the community energy can offer. Indeed, one of the biggest challenges facing community energy projects is that it is such a new concept that many key actors have in fact never heard of it. Educating and raising awareness thus becomes a crucial component of any community energy project.

7.3.1 Research

Four pieces of research were undertaken to inform the development of this sub-strategy:

- An internal review of community energy support organisations
- A national survey of community energy projects
- An Australia wide qualitative interview process to gather who and how natural allies can become enablers for the community energy movement. This encompassed: farmers and their representative bodies, renewable energy developers, government representatives, advocacy and environmental organisations, the business and co-operative sector, women's organisations, religious organisations and educational institutes.
- An international qualitative interview process with key global leaders in the community energy movement from: Denmark, Germany, United Kingdom and North America.

The research looked specifically at profile raising assets, needs and opportunities. This research revealed strong evidence for a highly collaborative, relationship-based approach for raising the profile of the sector simultaneously alongside the other strategies which serve to strengthen it.

Key findings to emerge from the research include:

- Good communication and relationship building are key to mainstreaming community energy.
- There is a willingness and opportunity to form a broad coalition of respected and influential organisations to build the support for community energy with millions of Australians.
- There is opportunity for education and awareness raising with allies, future partners and their stakeholders to understand the applicability, models and sheer scale of opportunity of community energy and alignment with their aims.
- There are existing opportunities of grassroots channels via the environmental sector to raise the profile of community energy on the ground that do not require significant financial or human resources to deliver.
- Strong relationships with local government and/or renewable energy developers will enable the flourishing of new partnership models.
- Key relationships with natural and important allies of the sector will serve to enable good policy conditions for the community energy sector and are thus pertinent to the other sub-strategies.

7.3.2 Key allies and stakeholders

In the survey undertaken, community energy proponents listed whom they perceived key stakeholders to be that are important for their project and that don't currently have an understanding of community energy. In order of frequency, proponents listed the main targets to be: local government, network providers, state government, hosts/ landowners, renewable energy developers, energy retailers, local communities, federal government, local business networks, as shown in the Wordle below.

Additionally, the interviews with key stakeholders showed that there is a desire and already a movement towards community energy occurring within other untapped networks such as the faith organisations. Connecting with networks like this will enable mainstream literacy and take-up of community energy.

The international research indicated that the Coalition for Community Energy is emerging at an ideal time in the birth of the Australian community energy sector. This research highlights the importance of national collaboration to raise the profile of community energy, as well as delivering successful policy conditions and wide scale community participation.



7.4 Additional information

For more information relating to and underpinning the Building Support Sub-Strategy, see:

- "Building Support" Research findings and analysis (working document)



“Never doubt that a small group of dedicated people can change the world, indeed it’s the only thing that ever has.”

Margaret Meade

8. SUB-STRATEGY V: Policy and Regulatory Reform

This sub-strategy addresses the range of government interventions and support programs that are needed to realise the vision for a vibrant community energy sector.

8.1 OBJECTIVE

- Foster a policy and regulatory environment that proactively removes barriers to and supports the growth of the community energy sector to reach its full potential.

8.2 PRIORITY INITIATIVES

8.2.1 Work to ensure there is strong and stable renewable energy policy

International examples demonstrate that strong policy that supports increased penetration of renewable energy and energy efficiency is a necessary precondition for – but not a sufficient condition in and of itself to create – a vibrant community energy sector. A recent review of international community energy policy²² shows the strongest renewable energy sectors have the strongest community renewable energy sectors and vice versa.

Stable and supportive policy is essential to the growth of the community energy sector, particularly allowing community energy models to evolve from a concept to widespread replication (see Appendix D).

In Australia, the main policy mechanisms that have supported renewable energy including community energy are the Renewable Energy Target (RET). Legislated agencies such as ARENA and the Clean Energy Finance Corporation (CEFC), or similar equivalents, have the potential to play a significant roles as the community energy sector evolves. As such, it is in the interests of the emerging community energy sector that these policies and supporting organisations be maintained and strengthened. The RET was found to be particularly critical to the economic viability of all investment based models of community energy (refer to cost modelling in Appendix F), even though community investors may be willing to receive lower rates of return than institutional investors. A 30% decline in RET-driven income results in an average 11% reduction in total project income for wind projects, and 6% reduction in total project income for solar projects, which has a critical influence on financial viability of these models.

²² http://cpagency.org.au/wp-content/uploads/2015/01/CPA_Best-Practice-International-Policy_Oct-2014.pdf



“Stand-alone power infrastructure can be locally owned and locally managed, with positive flow-on affects for local economies, particularly in regional areas that may suffer from poor power quality or unreliable supply. The risk of high energy prices for regional customers, which can be the result of more cost-reflective tariff structures, can also be proactively managed by transitioning to stand-alone power solutions or micro-grids. This will also help un-wind historical cross-subsidies from city to regional customers, reducing upward pressure on power prices for all.”¹

¹ Szatow, T., Moyses, D. 2014 What happens when we un-plug? Report by Energy for the People and the Alternative Technology Association.

8.2.2 Support projects in gaining access to electricity networks at a reasonable cost and timeframe.

The current grid connection approval process for distributed generators above the 'deemed' connection limit of 5 or 10kW is often onerous, unclear, provides no certainty for proponents and offers limited effective means of negotiation or appeal.

This results in community energy projects:

- incurring significant risk of high development costs and long delays after committing to proceed; and/or
- not proceeding due to this high degree of uncertainty.

Analysis underpinning cost modelling (Appendix F) indicated that grid connection can add significant cost to community wind models. For example, grid connection is currently anticipated to account for 18% of the upfront monetary costs of New England Wind. For Hepburn Wind, complications associated with being the first wind-farm to connect to the distribution network led to an additional unforeseen \$300,000 in extra technology costs, and \$600,000 in lost revenue due to being constrained for the first months of operation.

This problem restricts the capacity of consumers and communities of all scales to invest in distributed generation.

This priority involves advocating for grid connection processes for community energy projects that is timely, efficient, cost reflective, standardised, accessible, transparent and where proponents have recourse to effective arbitration when negotiations fail.

This priority initiative will likely entail the development of a rule change proposal or participating in existing rule change processes.

8.2.3 Advocate regulatory changes necessary to facilitate community off-grid or micro-grid systems.

While historically electricity network infrastructure used to be owned by regional cooperatives or local governments, now across Australia they are owned and managed centrally by either private or state government owned businesses. As such, the rules governing networks are no longer set-up for local ownership. However, research shows that:

“Stand-alone power infrastructure can be locally owned and locally managed, with positive flow-on affects for local economies, particularly in regional areas that may suffer from poor power quality or unreliable supply. The risk of high energy prices for regional customers, which can be the result of more cost-reflective tariff structures, can also be proactively managed by transitioning to stand-alone power solutions or micro-grids. This will also help un-wind historical cross-subsidies from city to regional customers, reducing upward pressure on power prices for all.”²³

As such, this priority initiative will help create the regulatory structures that enable and do not hinder community off-grid or micro-grid systems, including investigating the potential for communities to buy-back their grid.

8.2.4 Promote rights for projects to sell energy at a fair price.

This priority initiative is about creating the conditions whereby community energy projects are able to sell the energy they export to the grid for a fair price. Community renewable energy projects are restricted to four suboptimal options for selling energy:

- Contract with a retailer to sell energy (PPA), where there is currently little or no incentive to retailers to offer a fair price for this energy as:
 - > retailers are vertically integrated and/or hedged with generators which are in direct competition with community energy projects
 - > being non-scheduled generators (price takers), renewable energy projects place downward pressure on wholesale prices. While this benefits all consumers, it reduces profits to the vertically integrated and hedged retailers.
 - > the volume of energy provided by community energy generation projects are not of a scale that suits the high-volume preferences of most retailers.
- Sell directly to a customer behind the meter through a PPA (retail exemption), loan or lease style of arrangement.
- Register with AEMO as a Market Generator and sell energy on the spot market. This involves high registration fees, prudential and other costs and exposes projects to unacceptable price volatility.
- Sell GreenPower, noting that GreenPower is a voluntary market for Large Generation Certificates.

This priority initiative is about working out how to best ensure that community energy projects can secure a fair price for their electricity.

8.2.5 Advocate for rules that would make it easier and less costly to secure community investors

The majority of community energy models are based on the idea of many small community investor-members, however current regulations, specifically the Corporations Act makes it very difficult. In particular, small (<100kW) behind the meter solar projects with many community investors are not economically viable. This is because the compliance cost and requirements for projects with more than 20 investors contribute to making community energy projects financially unviable. For medium scale projects that are viable, this item can represent the one of the most significant project development and ongoing cost factors increasing overall monetary costs or volunteer time commitments (see Appendix F). Example requirements include, but are not limited to restrictions on public offerings and advertising without a costly prospectus (known as anti-hawking provisions, see Section 734 of the Corporations Act) and possibly needing an Australian Financial Services Licence (see 911A of the Corporations Act).

²³ Szatow, T., Moyse, D. 2014 What happens when we un-plug? Report by Energy for the People and the Alternative Technology Association.

The authors of this strategy understand that the compliance requirements and thresholds within the Corporations Act and the Cooperative National Law for example are done to protect consumers from ill-conceived or unscrupulous/predatory investments. As such, this priority initiative will involve the development of ideas including possible exemptions that would both address the cost prohibitive nature of compliance requirements for community energy groups while still protecting consumers. This priority initiative will work alongside the shared infrastructure platform initiative in the Finance and Funding sub-strategy, which looks at ways to address these issues, within the current regulatory framework.

Internationally, the UK and US have both reviewed their laws looking at small community equity investments in many types of projects. Specifically the US has granted an exemption to certain provisions within these laws to Mosaic, a solar equity/investment-based crowd funding platform, while in the UK exemptions have been granted to Abundance Generation. Thus while these organisations' operations are still regulated ensuring investor/consumer protection, the costs to community energy projects are lower.

Specifically, this priority initiative will look to input into the ongoing process exploring equity crowdfunding. Already a number of community energy groups and support organisations have provided submissions to the Corporations and Markets Advisory Committee's (CAMAC) Review of Crowd Sourced Equity Funding in 2013. This priority initiative will facilitate community energy stakeholders to continue to input into the ongoing policy discussion that resulted from the CAMAC and a subsequent 2014 review.

8.2.6 Work with State and Territory Governments to develop programs to support community energy.

The NSW Regional Clean Energy Program (RCEP) has been a significant champion for and driver of community energy in NSW and in Australia more broadly. The RCEP consists of a central team and six regional coordinators who support clean energy uptake in their regions, with an increasing focus on community energy projects. In addition to staff support the RCEP has coordinated two community energy grant programs and has funded a number of priority initiatives, such as the development of the Community-Owned Renewable Energy How to Guide. In the ACT, the Environment and Sustainable Development Directive (ESDD) has also supported community energy projects through funding and a wind and solar reverse auction.

The cost modelling exercise (Appendix F) revealed that more than half of the operating models of community energy received government support to get their first projects off the ground, and thus can be considered a common feature of success.

This priority initiative involves working with other state and territory governments to develop similar support programs for community energy.



8.2.7 Help establish dedicated community energy support policies.

There is significant international precedent for governments to actively encourage community energy projects and the development of a community energy sector. A few examples of policy levers that have been introduced to proactively support community energy are:

- The UK's community energy Feed-in Tariff;
- The bonus amounts available for renewable energy projects with a community ownership component as part of the German and Ontario, Canada, Feed-in Tariffs;
- The Danish and UK Governments requiring all wind farms to open up ownership to the community;
- The ACT's community solar reverse auction Feed-in Tariff;
- The ACT's reverse auction feed-in tariff for 200MW of wind having selection criteria dedicated to community benefit sharing and community engagement.
- The Scottish 500MW and Thai 800MW targets for community owned renewable energy.

This priority initiative will involve determining which of a range of policy levers to support and incentivise community energy projects are most appropriate, which jurisdiction (a local, state, territory or federal government) is most likely to institute the policy and will most benefit community energy groups and then work to implement the chosen policy mechanism. Such policy mechanisms could include:

- A Community Clean Energy Target. This idea gained traction at the recent Community Energy Congress and would apply a similar approach to the federal Renewable Energy Target but specifically for community renewable energy projects.
- Reverse auction feed-in tariffs for a specified amount of community renewable energy generation.
- Opening up government building roof space as potential host-sites for community solar projects and working with community energy proponents to make this model economically viable and socially and environmentally beneficial.
- Direct Power Purchase Agreements for the government's Large Generation Certificates (LGCs) liability with community requirements in the selection criteria. As a large electricity users, governments have large liabilities for renewable energy certificates. Typically, this will get covered through the normal energy retail contract. However, governments could renegotiate their electricity contracts removing the LREC liability and then go to tender for LRECs from new renewable energy projects in their state. This way they would guarantee their LREC liability was met from their state and they could include community engagement and benefit sharing criteria in the tender process.
- Encouraging increased community benefit sharing and community engagement in larger renewable energy projects.

8.2.8 Enable Virtual Net Metering

This priority initiative is a subset of #4 'Promote rights for projects to sell energy at a fair price.' Currently community energy projects are only financially viable if they are mid-scale and compete on the wholesale market, have a Power Purchase Agreement (PPA) or if they operate 'behind the meter' (such as community solar on commercial sites), attracting close to retail value for their generated energy. This restricts projects to specific sites with sufficient available load, and limits the opportunities for community energy projects to sell energy to their members. Virtual Net Metering (VNM) is a proposed arrangement that would overcome this barrier by allowing distributed generators to sell their 'exported' electricity generation to other nearby sites, using a smaller charge the use of the local grid. In doing so it would provide distributed community energy projects with a fair price for the energy they generate and export to the grid, and a direct contractual connection with members or other local buyers of the energy. The initiative involves the identification and development of specific methodologies to value the contribution of local exports to the electricity grid, underpinned by the principles of cost and value reflectivity. The ultimate goal of this initiative is the development of a Rule Change Proposal to allow VNM on public electricity grids, which would see appropriate charging for local use of the system, and a new business model for electricity networks into the future.

8.2.9 Advocate for supportive planning assessment frameworks for community energy projects.

The planning process is a significant step in the development of larger community energy projects. The planning assessment framework can either help or hinder the development of community energy projects. For example, currently in Victoria, the wind energy planning process – VC82 – is often referred to as the toughest planning regulations for wind energy in the world. With No-Go Zones, 2km 'set-backs' (distance to the nearest resident) and 5km set-backs from towns, this planning policy has effectively stalled most wind development in the state. This priority initiative is about advocating for the removal of these No-Go Zones set-backs and supportive planning frameworks to be instituted that recognise the significant community engagement and community benefit involved in developing and operating community energy projects.

8.3 Background to the objectives and priority initiatives

There are many policy and regulatory barriers to community energy. Additionally, there is significant international precedent for governments to actively encourage community energy projects and the development of a community energy sector.

This sub-strategy encompasses priority initiatives that:

- Address the barriers to community energy caused by policy or regulation,
- Address market barriers that while not always caused by policy or regulation can be fixed by policy or regulation, and
- Proactively incentivise and support the creation of community energy projects.

These are three roles that governments can play in helping to meet the vision for a vibrant community energy sector. It is hoped that a range of government departments and policy makers from across Australia will use this Strategy to inform the development of community energy policy. However, this sub-strategy is framed for community energy advocates and actors, acknowledging that non-government actors will play a significant role in putting community energy on the policy agenda.

8.3.1 International precedent

Governments across the world are recognising the unique opportunities and benefits presented by community participation in sustainable energy deployment. Countries such as Germany and Denmark have had policies in place to incentivise community renewable energy for decades. Others such as Japan, Thailand, the US and Canada have introduced similar policies more recently.

Well-designed and implemented community energy projects can meet numerous public policy objectives from reducing greenhouse gas emissions, to increasing support for renewable energy and the resilience of regional communities. Specifically community energy delivers strong benefits across all three pillars of sustainability:

- Social - with significant social capital and inclusion achieved through education, collective action and the wide distribution of benefits to the wider community and beyond the direct share and stakeholders. A wind farm operating for 20-25 years establishes the basis for long-term engagement with sustainability across a wide range of community members, stakeholders and key authorities;
- Environmental - with renewable power being a profoundly more benign source of electricity generation (measured in carbon footprint, water usage, biodiversity impacts and more) and growing anecdotal evidence of direct community involvement affecting an increase in energy and often environmental consciousness (for example resulting in increased demand management and efficiency take-up);
- Economic - much needed rural and regional economic development through local ownership of critical and cutting-edge infrastructure, ethical investment and dividends, local employment, business services, reduced economic leakages and philanthropic funding. A 2004 study by the U.S. General Accounting Office found that local ownership of wind farms generates an average of 2.3 times more jobs and 3.1 times more local dollars compared to absentee ownership.²⁴

As such, there is a growing rationale for policy support for community energy that actively helps mainstream a community approach to sustainable energy.

²⁴ US Department of Energy, 2012, The impact of wind development on county-level income and employment, www.windpoweringamerica.gov/pdfs/economic_development/2012/county_income_wind_development_impact.pdf



A recent International Community Energy Policy Review undertaken for the NSW Office of Environment and Heritage²⁵ provides an overview of best practice local and international examples government policy and other interventions to support community energy, with a particular focus on community renewable energy. Policy mechanisms outlined in this review include both financial (grants, loans, feed-in tariffs, incentive schemes) and non-financial (partnership-building, advisory services, working groups for critical issues, information sharing platforms, conferences and monitoring and evaluation mechanisms) options.

It is also important to note that most of the best practice examples of community energy support internationally occur in countries or states with strong policy environments for renewable energy more generally. A strong and stable policy environment for renewable energy has been important for creating the broader context within which community energy projects develop. Policies such as renewable energy targets, grid connection arrangements, energy market rules, tax incentives and financial support drive the development of a renewable energy sector in these countries. Support for community energy is then layered as additional incentives on top of these, in recognition of the unique opportunities, benefits and challenges of community scale and orientated projects.

8.3.2 Regulatory versus policy reform

In order to understand how the objectives outlined in this sub-strategy can be achieved, it is important to understand the different types of regulatory reform and policy mechanisms available and which jurisdictions or agencies can implement them.

In the context of this strategy regulatory reform refers to processes that change how our electricity and gas systems and markets operate. The key actors in this reform process are:

- Council of Australian Governments (COAG) Energy Council (previously the Standing Council on Energy and Resources),
- Australian Energy Market Commission (AEMC)
- Australian Energy Regulator (AER) and
- Australian Energy Market Operator (AEMO) (to a lesser extent).

²⁵ http://cpagency.org.au/wp-content/uploads/2015/01/CPA_Best-Practice-International-Policy_Oct-2014.pdf

8.3.3 Mechanisms of Policy and Regulatory reform

In a recent Strategic Review²⁶ for the NSW Government three main categories of policy support for community energy were identified:

1. Direct Financial Support – this is where a government provides direct financial resources through:
 - Grants
 - Loans
 - Commissioned Work
2. Policy and regulatory intervention through:
 - Reform existing policy and/or regulations
 - Create new incentive based policies
 - Advocate for particular policy or regulatory interventions in other jurisdictions
 - Pro-active purchase of community energy for government operations
3. Staff Services – where government staff undertake the following activities or deliver the following services:
 - Coordination
 - Networking and community engagement
 - Capacity building through training and mentoring
 - Resource development
 - Information sharing

The Community Energy Advocacy Strategy outlines in detail the role of each of these organisations in creating regulatory reform. While policy reform relates to a range of mechanisms that governments at all levels can institute, that are not specific to the National Energy Law and similar targeted pieces of legislation and subordinated Rules. The policy reform that this sub-strategy focuses on are those that state and federal governments could deliver to support community energy rather than at a local government level.

The main mechanisms of regulatory reform available are:

- Directly proposing changes to the National Energy Rules. To achieve material changes to the NEM generally requires a change to the National Electricity Rules. While most changes to the National Energy Rules are proposed by the COAG Energy Council (usually on recommendation of the AEMC), AER, AEMO, large scale energy generators, retailers, DNSPs or TNSPs and anyone else can propose a rule change. The AEMC has some flexibility in terms of how it goes about each rule change proposal process, although as the process includes at least two stages of public consultation and has to fit in with the AEMC's own schedule, the formal rule change process can be expected to take over a year know whether a proposal is successful in any case.
- Considering and inputting into/participating in consultation on proposed Rule Changes proposed by the other parties
- Encouraging the COAG Energy Council, jurisdictional governments or other parties to propose changes to the National Energy Rules (NER). The COAG Energy Council is best influenced through individual members (jurisdictional energy ministers) and/or representatives of its Standing Committee of Officials.

These mechanisms for policy and regulatory reform need to be carefully considered when the priority initiatives outlined in this sub-strategy move to the planning and implementation phase.

²⁶ Ison, N, Langham, E, Hicks, J, Berry, F, Jackson, M and Mey, F (2014) "OEH Community Renewable Energy Funding Program: Strategic Review". Prepared by the Institute for Sustainable Futures and Community Power Agency for NSW Office of Environment and Heritage, September 2014.

8.4 Additional information

For more information relating to and underpinning the Policy and Regulatory Reform Sub-Strategy, see:

Community Energy Advocacy Strategy developed by the Coalition for Community Energy in 2013 with funding from the Consumer Advocacy Panel

Government Support Options for Community Energy: A Review of Best Practice International Policy undertaken by Community Power Agency in 2014 as a part of a larger review led by ISF of the NSW Government's Community Energy Funding Program.

UK Community Energy Strategy developed by the UK Department of Energy and Climate Change in 2014.

9. DELIVERING THE STRATEGY AND TRACKING PROGRESS

The National Community Energy Strategy is intended to be a high-level plan for any actors – government, community or business – interested in growing a vibrant community energy sector in Australia to take up and work on. All readers are encouraged to use this strategy and its priority initiatives to guide their work and to contribute to a more supportive context for community energy.

The partner organisations in this project are also the founding members of the Coalition for Community Energy (C4CE). C4CE has been established as an action-based coalition, founded on collective impact principles underpinned by a collaborative governance framework. C4CE is open to any organisation or group who shares a vision for a vibrant community energy sector and is interested to collaborate on priority initiatives that bring mutual benefit to their group/organisation and the wider sector. The National Strategy is intended to be the shared agenda that guides the joint activities of C4CE members. Clearly it is beyond the scope for any one organisation or coalition to deliver all of the above priority initiatives. While C4CE will action some, the best outcome would see many actors contributing to the delivery of the aspects of the National Strategy that fit with their interests and skills.

If one or more priority initiatives or objectives outlined in this Strategy resonates with your organisation or group, or seems similar to something you are already working on, we invite you to contact the C4CE Secretariat on secretariat@c4ce.net.au. C4CE is looking to put groups working on similar ideas in contact, to realise any potential for collaborations and/or shared learning outcomes and increase impact.

A strategy is only useful if it is implemented and updated. As such, a monitoring and evaluation framework has been developed that provides the metrics to track the progress of the wider community energy sector as well as progress towards the vision, objectives and priority initiatives outlined in this Strategy. A full collective impact assessment of the community energy sector, including indicators and recommendations of how to institute shared measurement and monitoring processes is provided in Appendix C

Table 2 outlines a list of key indicators for each of the sub-strategies, drawn from the key and optional community energy impact indicators in Appendix C.

Appendix B provides a specific status update and suggested next steps for all of the priority initiatives identified in this strategy. It is intended that Appendix B be updated as part of the C4CE annual reporting process.

Monitoring and evaluation is also useful as it can lead to adaptation of the approach taken. The National Community Energy Strategy is intended to be a living document that is updated based on emerging opportunities and needs. As such, part of the core-business of C4CE will be to update the National Strategy annually or bi-annually as necessary, in part based on the results of the shared monitoring and evaluation processes and in conjunction with the delivery of the bi-annual Community Energy Congress. In addition organisations undertaking initiatives identified in this strategy will be encouraged to align initiative monitoring and evaluation with the process and indicators outlined in Appendix C.

'Energy being generated and managed by the community in a socially equitable fashion. Community management and engagement helps to bring social and community cohesion in our society. People in control of their energy futures - managing energy use (the cheapest energy is energy you don't use). Government recognition and support and involvement in making community work.'

Delegate at the Community Energy Congress, 17th June 2014



Table 2: Indicators for each sub-strategy area

Sub-Strategy Area	Relevant Indicators
Community Energy Models	<ul style="list-style-type: none"> • Projects - kW per CE model • Technology • Change in “availability of replicable community energy models” rating • Change in community energy group “satisfaction” rating
Funding and Finance	<ul style="list-style-type: none"> • Project cost • Total expected income • Funding by funding source • Return on Investment (ROI) • Change in “access to finance” rating • Volunteer hours • Savings • Flow on funding
Capacity Building	<ul style="list-style-type: none"> • Number of active members • Number of active decision makers • Events organised/attended • Number of site visits • Jobs created by project stage
Profile Raising and Stakeholder Support	<ul style="list-style-type: none"> • Number of supporters • Media coverage (number of media articles, etc.) • Change in “community attitude towards community energy” rating
Policy and Regulatory Reform	<ul style="list-style-type: none"> • Change in “state and federal government support for community energy” rating

10. APPENDICES AND ADDITIONAL INFORMATION

The National Community Energy Strategy is underpinned by a significant body of research. Some of this research has been synthesised into publicly available documents, particularly the seven appendices below, while other documents are working drafts that are available on request to any organisation working to progress this Strategy. The whole strategy and all the appendices can be found at www.c4ce.net.au/nces.

10.1 APPENDICES

Appendix A: List of community energy groups which identifies the groups in Australia known to the authors who are developing and/or operating at least one community energy project.

Appendix B: Priority Initiatives - Status and Actions which provides an overview of the current status of each of the 34 priority initiatives identified in the five sub-strategies and suggests next steps for their implementation.

Appendix C: Australian Community Energy Sector Collective Impact Assessment which identifies a process for assessing and tracking the progress and impact of the Australian community energy sector and this strategy, including a baseline assessment against key indicators.

Appendix D: Community Energy Model Maturity Index adapted from ARENA's Commercial Readiness Index, this document provides a framework for policy makers to think about how to support community energy models to maturity.

Appendix E: Behind the meter community solar resources including:

- An overview document of what behind the meter community solar models are, the context they sit within and the constraints they face,
- Descriptions of the five most viable community solar models operating or almost operating,
- A decision support flowchart to help groups decide which, if any of these models is appropriate for them, and
- A host-site checklist.

Appendix F: Community Energy Cost Analysis & Cost Reduction Potential Report which analyses the costs of six community energy models and identifies where cost reduction could occur through project replication and a range of other initiatives.

Appendix G: Community Energy Congress Evaluation Report which provides an overview and evaluation of the inaugural Community Energy Congress, held as part of developing the National Community Energy Strategy and attended by 340 community energy stakeholders.



The community co-owns the land, water, food and energy systems that they all need to survive. We care, manage and operate our systems of which renewable energy is of the heart. They are sustainable, eco-friendly and technologically viable. A warm sunshine over our solar farms, small clumps of wind turbines and bioenergy waste plants alongside the large beautiful areas for growing food.... It's a collaborative effort, everyone is inspired and we all are working together to make this happen.'

Delegate at the Community Energy Congress, 17th June 2014

10.2 Working drafts (Available on request)

- National Community Energy Survey Questions
- De-identified National Community Energy Survey raw data
- Community energy models preliminary survey analysis
- Capacity Building Research Summary
- Profile Raising and Stakeholder Support Sub-Strategy research findings.

10.3 OTHER SUPPORTING DOCUMENTS AND RESOURCES NOT DEVELOPED THROUGH THIS PROJECT

Community Energy Advocacy Strategy – funded by the Consumer Advocacy Panel, this document outlines the key regulatory and some policy reforms necessary to grow a vibrant community energy sector. Accessible at: www.advocacypanel.com.au/media/docs/Community-Energy-Advocacy-Strategy---Final-9699f27b-a112-4cef-a51e-e2a8b79bb9dc-0.pdf

Embark Wiki - which includes 150 articles on how to build projects, toolkits and case studies. Accessible at: www.embark.com.au

International Community Energy Policy Review – undertaken by the Community Power Agency as part of a review of the NSW Office of Environment and Heritage's policy support for community energy, this document outlines the range of best-practice policy support for community energy around the world. Accessible at: http://cpagency.org.au/wp-content/uploads/2015/01/CPA_Best-Practice-International-Policy_Oct-2014.pdf

Energy Archipelago - is an international map of community energy projects, part funded by the NSW Office of Environment and Heritage and delivered by Scene Consulting and the Community Power Agency. Accessible at: <http://energyarchipelago.com/#/map>

Community-Owned Renewable Energy: A How to Guide – authored by the Community Power Agency, is a guide to establishing a community energy project in your community, it includes brief case studies and an annotated list of key resources and organizations useful for progressing a project. Accessible at: http://cpagency.org.au/wp-content/uploads/2014/06/CPAgency_HowtoGuide2014-web.pdf

The National Community Energy Strategy is a pathway to the creation of a thriving community energy sector and movement in Australia and beyond.

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